

THIRD SERIES.

CURIOSITIES

OF

NATURAL HISTORY.

FRANK BUCKLAND, M.A.

LATE STUDENT OF CHRIST CHURCH, OXFORD, AND ASSISTANT-SURGEON 2ND LIFE GUARDS.

IN TWO VOLUMES.

VOL. II.



LONDON

RICHARD BENTLEY, NEW BURLINGTON STREET,

Publisher in Ordinary to Her Majesty.

1866.

LONDON: PRINTED BY WILLIAM CLOWES AND SONS, STAMFORD STREET
AND CHURCH LANE.

CONTENTS OF VOL. II.

	PAGE
PORPOISES	1
THE FRENCH GIANT	25
GIANTS IN GENERAL	32
HUMAN MUMMIES	44
WOOLLY WOMAN OF HAYTI	52
AUSTRALIAN FAT BOY	56
SPOTTED CHILD	57
NEW ZEALAND CHIEFS	59
WANDERING MOUNTBANKS	71
CATCHPENNIES	77
BABY-SHOW	82
OLMAR	86
INDIAN ROPE FEAT	89
PERFORMING BULL	93
JAMRACH'S ANIMAL STORE	96
PERFORMING FLEAS	100
ELEPHANT HORSE	107

	PAGE
TALKING FISH	121
MERMAIDS	113
THE NONDESCRIBT	118
COPPER EAGLE	123
MARBLE LADY	127
GROWING PLATE	128
ANTHROPOGLOSSOS	130
RIPON BONE-HOUSE	133
HYTHE BONE-HOUSE	138
ALDERSHOT SKULL	145
RELICS OF OLD LONDON	156
DISCOVERY OF THE REMAINS OF JOHN HUNTER	159
BEN JONSON'S SKULL	180
APPENDICES	191

ILLUSTRATIONS.

LIONS ROARING FOR THEIR PREY	<i>Frontispiece</i>
THE PORPOISE	<i>to face p. 2</i>
THE NONDESCRIBT	119

CURIOSITIES OF NATURAL HISTORY.

MY ADVENTURES AND JOURNEYS WITH PORPOISES

On Thursday morning, November 27, 1862, Mr. Bartlett was good enough to send me word to the 2nd Life Guards Barracks, Regent's Park, that he had just received a live porpoise.

I immediately went over to the Zoological Gardens and found the poor beast well cared for, and placed in a small tank of sea-water behind the aquarium-house.

On looking at our captive, I perceived that the porpoise was "very bad." He was upon his side—every now and then turning his under side uppermost. His breathing, or rather blowing, was hard and laboured, and his wonderfully-constructed blow-hole at the top of his head was working with difficulty. I counted his respirations, which were eight in the minute, loud and powerful (especially the expirations), reminding one of a man snoring heavily.

It was quite evident the porpoise was in a very exhausted state, and I could not help reasoning thus:—"This is an animal with a four-cavities heart; warm

blood, and air-breathing lungs; his system is much exhausted from a slow process of drowning *in air*; in fact, it is exactly in the same condition as a human being would be half drowned *in water*." . . .

Reasoning thus, I could not but help advising stimulants; and, having gained the permission of Mr. Bartlett, we agreed to give the porpoise a dose of ammonia immediately; but how to do it was the question. There was only one way; so I braved the cold water and jumped into the tank with the porpoise. I then held him up in my arms (he was very heavy), and, when I had got him in a favourable position, I poured a good dose of sal-volatile and water down his throat with a bottle.* (See Engraving.) . . .

This treatment had some salutary effect, for his respirations, which when I first saw him were eight in the minute, increased to ten, and then to twelve.

In two hours' time I visited him again, and again going into the water, lifted him up as well as I could while Mr. Bartlett poured down his throat a good glass of stiff brandy and water. Again the results were good the respirations increased to thirteen a minute.

Perceiving that the water in which he was floating was stained with blood, I examined him all over, and found a wound in his tail which was bleeding pretty fast. This I soon stopped with common salt.

Seeing that, in spite of all done, the porpoise did not get much better, Mr. Bartlett and myself agreed to give him another chance; so we fished him out of his tank

* I used a bottle because I could get the stimulant well down into the pharynx (the back part of the throat), and the glass was strong enough not to break if he bit at it.

and deposited him therein with a sentry to keep watch and guard, and supply fresh water continually, till such time as he should arrive to take him away to London.

I at once saw that it was a very fine beast (not a fish, I recollect), and seemed in a pretty good state of health, or, as Hall, the man who caught him in his sprat net, said, "Look at him, sir, he is as nice a young fish as ever came out of the sea—only just watch his actions, sir, he is as cheerful as a kitten; I think he is *more* frolicsome since he has been in the tank than he was when I first caught him in my sprat net. Live out of water, sir? in course he will; I only wish I could live as long *under* the water as you fellow can live out of it in the air—wish you luck with him! The London folks don't often see such a beautiful beast as that, sir."

Looking pretty close at the water in the tank, I observed that even though it had been frequently changed it had a blood-red tinge about it; so I got the porpoise out on my arms, and saw at once that he had rubbed the bark of the tip of his lower jaw, and that it was bleeding away just like a man's chin bleeds when he has cut himself in shaving.

"This hæmorrhage will weaken the beast," thought I; "it *must* be stopped." So I ran off to a chemist's shop, and got a pennyworth of stick-caustic or nitrate of silver, and, lifting the porpoise's head gently out of the water, applied the caustic freely to the wound. The smarting of the caustic made the porpoise waggle his tail smartly, like a duck just come out of the water on to the edge of a pond; but the bleeding at once stopped then and there, and ~~this~~ was what I wanted.

Knowing that it was not advisable to take the porpoise

to London in a tank containing water, because the water splashes down the blow-hole and has a tendency to choke him, Mr. Earnshaw, at my request, kindly ordered his carpenter to knock up a rough box, which by the way, when finished, looked amazingly like a coffin, and we brought it down to the place where the porpoise was blowing away, like a steamboat ready to start. We then wetted some blankets with sea-water, obtained a huge can of sea-water and a big sponge, and we were all ready for the start.

A few minutes before the train left the station we hoisted, with the aid of a number of fishermen, the porpoise bodily out of the tank, put him on the blankets in his box, and trundled him off to a fish truck in the station. And here I must return my thanks to Mr Barnett, the station master at Folkestone, who gave me and Tennent, the keeper from the Zoological, who was sent me to assist in the operations, every facility to take care of our precious charge. Mr. Barnett provided us with a guard's van, and in we bundled Tennant, myself and the porpoise. I sat at the end of the box, close to the sea-water tank, so as to have good command of our sea pig; and lucky it was I did so, for soon after the train started the porpoise was "taken worse," and began to breathe very hard. I at once saw the cause, the delicate membranes composing his blow hole were getting dry, and would not close properly,* so I set to work with the sponge, and the whole way up to London kept on perpetually wiping and sponging the beast's nose and body with the wet sponge, so anxious was I that he should live.

* See Appendix, Anatomy of Porpoises.

The train went very fast, and in order that the porpoise should have all the air possible I opened all the windows and shutters I could get at, so that there was a perfect hurricane blowing through the van where we three—happy trio—were ensconced in the semi-darkness, having only my little hand-lamp, which I always carry when likely to have to travel by railway at night. This letting in the draught was evidently a good plan for every part of the journey, save and except the long tunnels.

When we got into these, the steam and smoke from the engine came in through the open windows, got down into the porpoise's blow hole, and made him snort and sneeze to such a degree, that I became positively alarmed for his life. His respirations increased from nine to fifteen in a minute, and I thought he was going to die then and there. Once out of the tunnel, he got better again, and the faster the train went the better the porpoise seemed to breathe. He had never travelled so fast before in his life, I'll be bound, and was doubtless much astonished at the rate in which he was being whisked through the air; though even this is doubtful, for he can swim at the bows of an ocean steamer going at express pace.

In about two hours and a-half we ran into the London-Bridge station, and right glad I was, for I was tired enough, sponging and watching the creature so incessantly. Mr. Bartlett had sent a light cart for us; we therefore whipped the porpoise, box and all, into the cart, and away we went through the London streets like a fire-engine going to a fire. When we got to Cumberland Market, Regent's Park, I was lighting my pipe, when I dropped, by accident, a vesuvian on

the porpoise's back; this made the porpoise jump up and roll round in his wooden cage like a "jack-in-the-box." "He's a-going, sir! he's a-going!" said the driver. "No, he is not a-going," said I; "you cut along with the cart, and attend to the horse, leave the porpoise to me; you have not got many yards to go now."

Arrived at the Zoological Gardens, we drove straight to the reservoir, where the water was deeper than the sturgeon's pond—besides which we did not want another poetical jobation in the columns of *Punch* and the *Times* from the royal fish for intruding on his privacy. The big reservoir would be a much better place, we thought, and so we drove the cart as near as we could to its edge. We then lifted out our porpoise—he was "very bad," and breathing much too fast to please me: we carried him up to the reservoir, Bartlett at his head and I at his tail, and let him slip slowly down, tail foremost, into the water. It was pitch dark, and I could hardly see what I was about. The mud was up to one's knees, and it was raining hard. I knew, however, by the splash that he was all right in the water. We then sat down and watched our friend by the help of the policeman's lantern, and in about half an hour he seemed so much better (though occasionally turning over and showing his white sides, an appearance which I did not much like), that we went away to bed quite tired out.

The next morning I was much pleased to hear that our porpoise was doing very well, and seemed better. Both Mr. Bartlett and I agreed that he was weak from want of food, but how to feed him was the difficulty. Mr.

Bartlett suggested a fish tied by string to a pole. I immediately caught the idea, sent for my jack trolling-rod, line, and spinning-tackle, and, taking a fresh herring, tied it by the tail to a fine bit of thin silk, and attached the other end of the silk to the spinning-tackle—of course without any hooks. I then judiciously spun the herring right in front of the porpoise's nose. To our great delight he took it in a moment, with a snap like a jack, and sailed away with it in his mouth. I gave him plenty of line (as in gorge-bait fishing for jack), and he ran it out famously. I then gave him some three or four minutes' law, and then jerked suddenly upon the line. Mr. Bartlett's plan acted admirably, and just as we wanted it to act, for the silk broke short off, and the herring remained in the porpoise's mouth. The porpoise then chumped and gnawed at the bait, but could not swallow it, he was too weak to get it down, and dropped it to the bottom of the pond. We then cut a smaller bit of herring; he attempted to gorge this also, but, as with the larger fish, he could not swallow, and dropped this also, even this little bit. We then tried with a small live carp, which we tied with thin silk on by the tail in the same way as the herring. Strange to say, he would not attempt to bite at this, as though he knew it was not a salt-water fish, but a fresh-water fish, and "no good" to him.

Mr. Bartlett then tried with the spinning-rod line, a small whiting being the bait. The porpoise took seven or eight baits from us in this way, but not one would he swallow down; he dropped them all after munching them a bit. Upon consultation, therefore.

we determined, that as the beast was too weak to swallow of its own accord, that we would help him; so I got down by a ladder into the reservoir, and, catching the porpoise by the fin as he passed, watched my opportunity and pushed a herring with my hand right down into his stomach; he scored my hand with his teeth, but I did not care about that. For a minute or two after I had given him the herring he seemed better, but he very soon began to show that his supper did not agree with him, for he began to flutter his tail and dance about at the top of the water.

—After sundry efforts, he made a spring, spat up the herring, and then—ungrateful wretch! after all the trouble and labour I had bestowed upon him turned up his fins and died right off. The cause of his death was, I believe, the herring sticking in his throat as he ejected it from his stomach, and so suffocating him. If he had left it in his stomach where I put it, I don't think he would have died. o

Dr. Sclater, Mr. Bartlett, and myself, were all, of course, very sorry that this porpoise should so suddenly have taken leave of us in this offhand manner. Nevertheless, we intend to persevere, and have a live porpoise one of these days at the Gardens. We have now gained many minor experiences, and the proper food of these curious water mammalia, and we intend to persevere till we succeed, for we now know perfectly how the transport is to be managed.

Should this meet the eye of any gentleman who can obtain a live and *uninjured* (mind his eyes have not been put out) porpoise for us, at any reasonable distance from town, we should feel most obliged if he would at

once buy him, place him immediately in a large salt-water tank, or even a fresh-water pond or reservoir of clean water (if there be one handy), and telegraph at once to Dr. Sclater, Secretary to the Society, Mr. Bartlett, or myself, and a messenger would come down at once to fetch him up to the Gardens, where, if we should succeed, he would doubtless become a great source of amusement and instruction to the public.

I make this request, *he it remarked*, as one of the Fellows of the Society, and *not with any wish in any way whatever to interfere with the operations of the Council*, for I hold no office in the Society.

The events described above in the transport of this porpoise to London were, shortly after the above lines appeared in the columns of the "*Times*" and "*The Field*," put, unknown to myself, into verse by a friend, under the *nom de plume* of Wadding; and one Saturday morning I was much astonished and amused to find in the columns of "*The Field*" the following distich, which I trust will amuse the reader as much as it did myself:—

FRANK BUCKLAND'S PORPOISE.

Air—"The King of the Cannibal Islands."

Oh! have you heard the news of late,
About a mighty fish so great?
If you've not 'tis in my pate—

Why Buckland's got a Porpoise!
The telegraph a message bore
From Messrs. Minter and Earnshaw,
Which duly reached Frank Buckland's door
From Folkestone—"We've a fish on shore!"

So off on Monday morning set
 Frank Buckland and Signor Bartlett,
 That they, if possible, might get
 Alive—Frank Buckland's Porpoise.
 Fishery, fleshery, fowelry, jig,
 Rum-tum-toodlum, little or big,
 For whether a moa, a porpoise, or pig,
 'Tis all the same to Buckland.

Arrived at Folkestone, in a tank
 They found Sir Porpoise, lean and lank,
 But still alive—how glad was Frank!
 To see his darling Porpoise.
 To get him home, "that was the rub,"
 So they had made a kind of tub
 Stuffed full of blankets—but no grub,
 Nor any kind of drink was sub-
 Stituted for the lack of sea,
 From which unkindly they took he,
 That Londoners might come and see
 Frank Buckland's darling Porpoise.
 Fishery, fleshery, &c.

Ensconced within the railway van
 Sat Tennant, the Society's man,
 With marine water in a can,
 And sponge for Buckland's Porpoise.
 Frank Buckland too was there, "in course,"
 His kind attentions to disburse;
 'Twas lucky the fish had such a nurse,
 For he, ere long, was "taken worse."

The cause soon caught Frank Buckland’s eye,
 And he the sponge began to ply,
 For the porpoise he was “werry dry”
 About his nose and corpus.
 Fishery, fleshery, &c.

Arrived in town, through streets they start;
 Friend Bartlett he had sent a cart
 In order to perform his part
 To carry away the Porpoise.
 Said Frank, “This journey is no joke,
 I’m tired, so I’ll have a smoke;”
 But in his haste the fusee broke
 (Enough a parson to provoke);
 It hissing, sparkling, fell, alack!
 Ere he could save it, in a crack,
 And, sad to say, it burnt the back
 Of his own darling Porpoise.
 Fishery, fleshery, &c.

No joys are e’er without their woes—
 With fish, as with us, I suppose—
 So thinks Frank Buckland as he goes,
 For the porpoise was a raving.
 Ye gods! what can the matter be?
 The water’s tinged with blood, d’ye see!
 This funny fish has had a spree,
 And’s trying now to humbug me!
 Thus thought Frank—before they start,
 What remedy can I impart?
 When, said the man who drove the cart,
 “He’s out hisself a shavin’.”
 Fishery, fleshery, &c.

The Garden's gate they quickly gain,
 Wet through, with the monster of the main ;
 But whether there's snow, or hail, or rain,
 Frank doesn't care two "gardens."
 They place him in the reservoir,
 And gave him herrings, three or four,
 But he couldn't swallow—his throat was sore,
 Frank Buckland mourns—his pet's no more !
 So fishermen all, I hope you'll strive
 Another porpoise to "catch alive,"
 That Buckland may at last contrive
 To have one in the Gardens.

WADDING.

(See Appendix. Further information about porpoises ;
 for hints as to the catching a porpoise with hook and
 line, &c., will be found in the Appendix.)

EXHIBITIONS.

M. J. BRICE, THE FRENCH GIANT.

"I AM the agent and interpreter of a French subject; he is a giant; his height is 8 feet; his weight 30 stone; his age 22; of a pleasing exterior. I take the liberty to offer him to your lordships' notice, &c. &c." —

The above paragraph caught my eye among the advertisements of "The Times," in May, 1862—just at the time the Great Exhibition was about to be opened.

It appears that the giant had offered his services in costume on this memorable occasion, but they were refused.

Thinking it likely that the giant would not leave London without exhibiting himself, I made inquiries as to his whereabouts, and at last discovered him.

On my first introduction to M. Joseph Brice (for that is his name), I confess I felt, literally, "very small;" but, after a few minutes' conversation, recovered from my feelings of "smallness," and at once perceived that my friend was not only a giant, but also *un bon gargon*.

Giants, for the most part, exhibit enormous proportions of limbs at the expense of the mental powers. M. Brice is an exception to this rule; he carried with him an agreeable air of *politesse*; he is courteous and affable to strangers; and his manners are so agreeable, that his visitors feel at ease in his presence, and not *gauché* and uncomfortable, as English people are too apt to feel when they try to do the civil to Frenchmen. He is fond of conversation, and there is a sly vein of humour in his remarks; he is the "Good-natured Giant," and not the fierce Fe-Fo-Fum ogre of the nursery tales.

When I first made acquaintance with the giant, he was dressed in the uniform of the Tambour-Major (drum major) of the French Imperial Guard. In this costume he looked really magnificent. His age was 22 years; and the handbills stated that his height was 8 feet. It really was about 7 feet 6½ inches, from that to 7 feet 7 inches. Anyhow, a doorway 7 feet 6½ inches would not let him through without his stooping considerably. I would beg the reader just to mark out 7 feet 8 inches on the wall of his room, and compare his own stature by the mark, and he will see to what an enormous stature M. Brice had attained.

The following is the personal history of the giant:—His name is Joseph Brice. He was born at the village of Ramonchamp, in the Vosges, a chain of mountains bounding the valley of the Rhine on the west, from the neighbourhood of Muhlhausen, to that of Mayence; the chain is partly in France, partly in the Rhenish province of Bavaria.

M. Brice was born in that part of the range which

belongs to France, and hence he sometimes calls himself "The Giant of the Mountains." He speaks French perfectly, without the least trace of a *patois*.

His parents were hard-working, respectable farm-people: they were by no means gigantic themselves, but about the ordinary size of French peasants.

At his birth there was nothing to indicate that he was about to grow to his present stature, and up to the age of six years, his height did not exceed that of most children of his age. After a short illness, he began to assume such gigantic proportions that his parents were much alarmed about him, but still he continued to grow and enjoy perfect health.

At the age of thirteen he was equal to the height of his father and the generality of the neighbouring farmers.

The phenomenon of his being as tall as a man and yet showing all the habits and actions of a child, caused him to be the talk of the neighbourhood, and to suffer at the same time great personal discomfort; for the children would not play with him, the men could not associate with him.

At the age of sixteen he commenced to exhibit himself in public, and visited the principal towns in France, and at Paris, where he was well received, not only by the Emperor himself, but by the public in general.

I paid the giant several visits: somehow or another, we took a fancy to each other, and I did my best to do what little services I could, as he was quite a stranger in England, and had not a single friend in London, and this he evidently felt much. I therefore determined to do my best to be a real friend to the poor

giant—good-natured, excellent, gentlemanlike fellow as he was!

We ultimately became great friends, and I invited him up to the Regent's Park Barracks, where I introduced him to my brother-Officers. It was great fun to see our great, tall Life-Guard Troopers stand by his side, or walk under his arm, and look *up* to him.

A very curious thing took place. At one of his visits I took him into the stables to see the troop-horses, and as he passed through the stable, the horses shied and snorted at him. They were pretty well accustomed to tall men, but yet they actually shied at the giant! So he must have been something extraordinary.

After I had known him some time, I persuaded the giant to allow me to take his measurements (N.B., I was obliged to get on a chair to do it). They were as follows:—

	Inches.
Actual height	90
Circumference of head	25
Round the chest	54
Across the shoulders	25
Length of arm (humerus)	19
Length of forearm (radius)	25½
Circumference of forearm	14
Length of middle finger	5½
Diameter of hand	6
Length of thigh-bone (femur)	27½
Length of leg-bone (tibia)	22½
Length of foot	15½
Diameter of foot	8
Stretch of arms	95½

At my request, he was good enough to extend his arm at full length against the wall, and I found his full stretch to be no less than $95\frac{1}{2}$ inches; in fact, he very nearly answers to the dimensions that every well-made man ought to show on measurement. And I have this on the authority of an eminent sculptor. The rule is, this: If a measure be taken from the exact centre of the body, and the person stands spread-eagle fashion, the measure ought to describe a circle, the circumference being marked by the end of the outstretched hand and arm, and of the leg and foot—these limbs forming the radii of a circle.

• Casts of the giant's hand were taken at my suggestion, and I have two casts now in my possession. He also presented me with a pair of his shoes, which are, indeed, regular canoes; they measure 1 foot 4 inches in length, and $5\frac{1}{4}$ inches across.

After a while, the giant left London for a tour in the provinces. By a most extraordinary coincidence, almost wherever I went to lecture, I found my friend the giant also in the town, and this without either of us having the least idea of meeting. Thus, when I went to Sheffield, there was the giant; at Liverpool, Nottingham, and at Worcester, always the same thing; the giant was always pleased to see me as much as I was to see him. In the course of his travels in Ireland, the giant had fallen in love; and at Worcester he introduced me to Mrs. Brice—a very agreeable, good-looking, chatty girl—who has made the giant an excellent wife, and takes the greatest care of him.

In October, 1865, M. Brice and his wife returned to London, Mr. Anderson having engaged his services at

St. James's Hall, where he is at this time, December, 1865, appearing as "Anak, King of the Anakims; or, The Giant of Giants." Just before his arrival, Chang, the Chinese giant, had been holding his levées at the Egyptian Hall, and Brice came up as a sort of rival. Brice is much the finest man of the two, in every way, — at least, to my taste.

On his arrival in London, I gave a dinner-party in honour of Mr. and Mrs. Brice, and a very pleasant evening we spent. The giant, I observed, had certainly grown somewhat. We made out his height to be (soldier measurement) about 7 feet 8 inches, and he was well and hearty—thanks to Mrs. Brice's care of him.

When the party broke up, I sent for a cab. It was very amusing to see the cabman's face of semi-horror and astonishment when his fare came out into the streets in the dim gaslight; he seemed half inclined to jump on his box and bolt away as fast as his horse could go. The giant, however, put his elbow on the top of the cab, and told the man where to go. This pacified him a little; for the poor fellow, I believe, fancied we were playing some trick upon him.

After dinner, the giant showed us how far he could stretch his arm: the tops of his fingers touched the cornice of the room, just 9 feet 8 inches from the ground; in fact, he could "catch flies off the ceiling" if he stood on tiptoe.

I asked the giant if, in his travels in England, Ireland, or Scotland, he had met with any man taller, or nearly as tall, as himself. He told me the tallest men he had met with were as follows:—

1st. A gentleman (he believed of the legal profession)

who came to see him at Haverfordwest, who measured 6 feet 8½ inches.

2nd. A man in the police force at Newcastle, who measured 6 feet 9½ inches.

3rd. John Greeve, of Pontefract, Yorkshire, who measured 6 feet 10½ inches.

The giant informed me that the greatest number of tall men he observed in his tour throughout the United Kingdom, were in Yorkshire and Lancashire; and this corresponds very much to my experience as medical officer of the 2nd Life Guards. The geological condition of the soil, I found in my experience in examining recruits for the regiment, has considerable effect upon the stature of the inhabitants;—*coal-producing* countries, as a rule, generally grow the tallest, and, at the same time, the largest-boned men.*

P.S.—I have observed the last few weeks flaming handbills, about London in which my name is printed in huge red letters as the authority for the measurements of the giant; other than I have given above. I beg to inform the public that these bills were distributed without my knowledge or permission, and I am in no way responsible for the statements made. The giant himself had nothing to do with these bills. November 20, 1865.

* I propose writing my notes on this subject some day in a distinct chapter.

GIANTS IN GENERAL.

THE last giant I had the pleasure of visiting, and also privately entertaining, was a Spanish giant, whom many of my readers must recollect as being exhibited at the Cosmorama Rooms, in Regent-street. His name was Senor Joachim Eleizegue. He came from the Basque provinces of Spain, and his height was *said to be* 7 feet 10 inches. I regret much I did not take accurate measurements at the time, as I frequently saw him in private. I can well recollect he was not nearly such a fine or such a "nice" giant as M. Brice. His cousin happened to be a patient at St. George's Hospital at the time I was student there, and the giant was in the habit of paying frequent visits to his invalided cousin, and much the other patients were astonished when he came stalking into the wards.

Among modern giants I must now mention the following: In the Royal College of Surgeons, Lincoln's-inn-fields, is the skeleton of a giant who in his day excited great wonder and curiosity; his name was O'Brian, or Byrne; he was commonly known by the

title of the Irish giant.* This man was said to have been 8 feet high. I have measured his skeleton carefully for my present purpose, and find it to be 92½ inches, as near as possible.

His history, as quoted by the College catalogue from the Annual Register's Chronicle, June 1783, vol. xxxv., p. 209, is as follows: "In Cockspur-street, Charing-cross, died Mr. Charles Byrne, the famous Irish giant, whose death was said to have been precipitated by excessive drinking, but more particularly by the late loss of almost all his property, which he had simply invested in a single Bank of England note for 700l."

I hear he hid his note in the fireplace in summer-time, and somebody lighted the fire and burnt the poor giant's hard earnings. I think it was old Mr. Cliff who told me.

Our present readers may not be displeased to know, on the evidence of an ingenious correspondent, who had an opportunity of informing himself, that Mr. Byrne, in August, 1780, measured 8 feet; in 1782 he had gained two inches. Neither father, mother, brother, or other person of his family was of an extraordinary size.

The limbs in O'Brian's skeleton are well-proportioned, but he must have been "in-kneed," and the arms are relatively shorter than the legs.

We have at the College a portrait of O'Brian, and it appears that his visitors made the same personal comparisons with the giant in 1783 as the visitors of the present day do when they give M. Brice a call; for I

* Mr. Cliff told me how this skeleton was procured, but the story might not please some of my readers. A pair of O'Brian's stockings are, I believe, in the Museum at Bristol.

saw an old drawing of O'Brian's *soigée*, a little doctor (my. antitype, I suppose) perched high on a chair measuring his chest. A soldier (of the period) was standing on tiptoe under his arm, and a good-looking young lady was showing her pretty "tiny silken-sandl'd" foot by the side of the giant's, the comparison being greatly in favour of the lady's foot, as far as beauty went.

Besides the above there are at the College casts of the hands of Patrick Cotter, the Irish giant, whose height was 8 feet 7½ inches; also of Mr. Louis Frenz, whose height was 7 feet 4 inches; also casts of the hands of a Lapland giant, and of an English giant, named Bradley, to the latter of whom Mr. Bushby thus in "The Field" reverts:—

In Mr. Buckland's article on "Giants," in "The Field" of Saturday, he spoke of a cast of a hand of Bradley. William Bradley, the Yorkshire Giant, was born at Market Weighton, in the East Riding of Yorkshire, in the year 1798 (and I have an engraving of him, published in London, May 8th, 1811, by Messrs. Bradley and Gibson); at nineteen years of age he stood 7 ft. 8 in., and weighed 27 stone (of 14 lbs. to the stone). He died in, or about, the year 1820. He has, or had, last September (I saw him), living at Market Weighton, a brother, Robert Bradley; and there are several old people in Market Weighton, who knew him well. I never saw him myself.

I am, &c.

Darfield, Barnsley, Yorkshire.

JOHN BUSHBY.

About the time that M. Brice was in London the Irish giant, Murphy, died of small-pox at Marseilles. He was twenty-six years of age, about twenty-four stone in weight, and (it is said) was within a few inches of 9 feet high. He was a native of Killowen, near Ros-trevor. He began life as a labourer at the Liverpool

docks, but soon obtained a situation as a waiter at an hotel, where his size, and agreeable manners helped to bring custom to the house. He then took to exhibiting himself regularly, and made a little fortune.

Of other giants I have the following records. The heights given of some of these men I think must be excessive.

On a tombstone in the churchyard of Calverley, in Yorkshire, is an inscription to the memory of "Benjamin, son of John Cromach, who died 25th September, 1826, aged twenty-five years," who took a coffin 7 feet 11 inches long. Again, in 1572, Del Rio saw a Piedmontese more than 9 feet in stature. Julius Scaliger describes a giant he saw at Milan lying upon two beds placed end to end. Gasper Bauhin cites a Swiss of 8 feet. A Swede, one of the body-guard of the King of Prussia, was 8½ feet; and Vanderbrook saw a black man, a Congo, 9 feet high. Berkeley, the celebrated Bishop of Cloyne, was of opinion that he could raise up by artificial means a rival to Og and Goliath. He tried the experiment on a lad named Macgrath. The lad waxed taller and taller, and at length was carried all over Europe as a show. Just, however, as he had reached the age of twenty, and the stature of 7 feet 8 inches, according to the "London Chronicle" of 1760, page 506, the poor giant died.

In the year 1684 was exhibited in public, at Oxford, Edmund Melloon (born at Port Leicester, in Ireland); he was nineteen years of age, and was 7 feet 6 inches high; not so big as M. Brice; his finger was 6½ inches long; span 14 inches, cubic 2 feet 2 inches.

In the year 1682 was exhibited, at Dublin, another

giant. His father was in no way remarkable for his height, and his mother was of a more than ordinary low stature. When he stood on the bare ground, with his shoes off, he measured full 7 feet 7 inches.

At Madame Tussaud's Exhibition, in Baker-street, there is a wax model of Loushkin, the Russian giant, "the tallest man that has ever lived in modern days," measuring 8 feet 5 inches high, dressed in his military costume as drum-major of the Imperial Regiment of Guards, Preobrajenskey." In the "Chamber of Horrors" is a cast of the thigh-bone of this giant, and also a model of his hand; &c.

I omitted to mention, that at the College of Surgeons, close to O'Brian's skeleton, stands that of a man who, not many years ago, served at the bar of the Lion and Ball, in Red Lion-street, London. He was called "the American giant." The height of the skeleton, by measurement, is 6 feet 9 inches.

When my late lamented friend, Dr. Gentzik, of Vienna, was in England, I showed him the cast of M. Brice's hand, in my possession. He informed me that there were some gigantic human bones in the Museum at Vienna, &c. I immediately wrote to Professor Jos. Hyrtl, who very kindly sent me the following information:—

"SIR,

"I hasten to send you the measurements of the giant bones belonging to the anatomical museum under my care, together with some information I could pick up about the individual who was the bearer of them.

"In the latter half of the 18th century the burying-

place surrounding St. Stephen's Cathedral was cleared out by order of the Emperor Joseph II. An immense quantity of bones were conveyed to the churchyards of the suburbs. A medical officer was ordered to inspect them, and to collect pathological specimens. A cart-load of such was brought to the University, where they were put up in the anatomical museum. The most interesting among them are the giant bones in question: *Os innominatum*, femur and tibia. Comparing the length of these bones with that of the same in an individual of known length, it is but an easy reckoning that our giant was a very young man, somewhat above 8 feet 6 inches in height. No other known giants attained such an enormous development, viz., the great Tonas, in the Museum of Berlin, a similar skeleton in the Museum of Marburg, and the famous O'Brian in the Hunterian collection.

"My Professor of Anatomy, thirty years ago, Dr. Mayer, told me repeatedly he had heard from his grandfather, that in the time of the latter there was in Vienna a story, very common, of the big *Hayduk*, in the service of Count Hunyady. This *Hayduk* (an inferior kind of body-guard of Hungarian magnates) was originally a Turk in the army which besieged Vienna in the year 1683. During a valiant sally of the armed citizens he was badly wounded and made prisoner. The fathers of the Franciscan convent in the town took care of him, and succeeded in converting the poor fellow to Christianity. The above count, who probably was also a curiosity-hunter, fond of giants, enlisted the re-convalescent convert as his *Hayduk*, and let him officiate as porter to his palace in Vienna. The house bore for a long time

the nickname, 'To the big Hayduk,' and when there was wanted a comparison with somewhat very great, the 'big Hayduk' found his way to the mouth of every man in Vienna. So far goes Professor Mayer, who took it for granted that the astonishing remnants of the giant skeleton are those of the 'big Hayduk.' *Relata refero.*

"Your very obedient servant,

"JOS. HYRTL.

"Vienna, Sept. 30th, 1862."

With reference to the discovery of gigantic human skeletons, Mr. Bartlett tells me the following curious and interesting story:—

An Irish labourer once told him that he had discovered the skeleton of a giant in an Irish bog; he described it as placed *on its back*; the back-bone, the legs and arms were, he stated, quite perfect, and also that, in his opinion, these bones must have been the remains of a person not less than 17 feet high.

Mr. Bartlett, of course, rather laughed at the story, but, being a wise man, determined to go deeper into the matter, and cross-examined the Irish labourer very closely; the man was positive about the story, so positive indeed that it was quite evident he was telling no lies. Mr. Bartlett at last ascertained that this skeleton was that of an ancient Irish elk (*Cervus megaceros*): the head was missing, but the bones happening to be placed flat on the ground in the manner that a human skeleton would naturally assume, they resembled so much (to the uneducated eye) the bones of a gigantic specimen of the human subject, that the mistake is almost pardonable.

This is a good lesson, always to inquire into stories, however improbable they may appear at first sight.

I cannot help placing with the above a most remarkable instance of a discovery of human bones, which might if found by any one but a scientific observer be written as giant's bones. Professor James D. Forbes thus writes :— " We found (among the precipices of Mont Colton) the remains of the bones and skins of two chamois, and near them the complete bones of a man. The latter were arranged in a very singular manner, nearly the whole skeleton being there in detached bones, laid in order along the ice ; the skull lowest, next the arms and ribs, and finally the bones of the pelvis, legs and feet disposed along the glacier, so that the distance between the head and feet might be five yards ; a disposition certainly arising from some natural cause not very easy to assign."

The disposition of these bones must of course be dependent upon the movement of the ice blocks forming the glacier upon which the bones were placed : if Professor Forbes cannot explain it, it would be presumptuous in me to make the attempt.

Though authentic accounts of giants in the flesh are not very common, we find instances innumerable on record of the bones and skeletons of giants having been found buried in the earth. Some labourers who were digging gravel in front of St. John's College, Oxford, discovered and trundled off to my father a wheelbarrow full of "giants' bones," which he immediately decided to be the bones of fossil elephants. The men were persuaded into this belief, but they began to account for the presence of the elephant, coming to the conclusion

over the price of the giants' bones that fossil elephants were all nonsense, and that the elephant whose bones they found *must have been one that died in Wombwell's menagerie*, though no one of the company could call to mind such an event ever having happened.

These "giants' bones" are and have been found and talked about by all nations; and when the rude inhabitants of Siberia discovered the celebrated fossil elephant in the frozen earth, they called it the 'mammoth, or animal of the earth,' and believed the remains were those of a gigantic animal that was still living beneath the surface of the earth. Many accounts are given by ancient authors, such as Kircher and others, not "of gigantic bones only, but of vastly gigantic men found buried underground, or in the hollow caverns of mountains." Of these a learned author, writing in 1722, says:—"Remains, such I mean as are truly bone (for some are only natural petrifications and lapides *sui generis*), were bones belonging to some of the biggest quadrupeds, as elephants, or some of the argest sort of fishes of the whale kind; and I am persuaded that the large tooth mentioned by Ol. Wormius was nothing else than the tooth of the *Cetus dentatus*, or spermaceti whale."

All this I fully indorse. It is a curious passage, and one of the first that began to throw light upon the popular legends and stories of former days, when science was yet young, and exhibitions of giants' bones were not uncommon. In 1721, for example, the hand of a giant was publicly shown for money; his hand being, according to the author above quoted, 'the bones of the fore fin of a porpoise or small

whale artificially joyned together." Here, then, is a good hint for an English Barnum; for the bones of the fin of a porpoise or whale, when the skin has been removed, marvellously resemble in appearance and shape those in the human hand.

Even at the present day the belief in bones of giants dug out of the earth, is by no means extinct, for a gentleman has sent me a tooth of a fossil horse, when M. Brice was in London, and asked if it *was not a giant's tooth*. I showed it to my friend Brice, the French giant, and we had a hearty laugh when we made the comparison of the horse's tooth with one of his own.

According to an ancient scientific work, in the "medicine school" at Leyden is a prodigious *os frontis* or frontal bone of a giant, measuring nine inches transversely, in the convex way twelve inches. A figure is given of this bone alongside that of a man of ordinary stature. After giving many details, the describer of this bone goes on to say, "*whence it must follow that the man to whom this bone belonged was more than twice the height that men usually are, according to the common course of nature—that is, more than eleven or twelve feet high.*"

Now, here is a difficulty to be overcome. Upon carefully reading the above account, and examining the plate with accuracy, I have no hesitation in granting the fact of the bone in question being human, and of an extraordinary size; but at the same time, I conceive it to be the bone of some person who had been afflicted with chronic hydrocephalus, or water on the brain, and this disease had caused the bones of the skull to assume the proportions it presented. That persons afflicted

with this disease will live for several years I have no doubt, as I once paid a penny to a showman to see such a person, aged about fourteen years. In this case the head was gigantic, the body attenuated and shrivelled up. The skull of this person would have made a famous giant's skull. If this is not evidence enough to explain the nature of the supposed giant's skull, I adduce the evidence of but yesterday; for Mr. C. E. Harle has of late occupied himself in measuring with tape the external dimensions, and with dry sand the internal capacities, of most of the abnormal skulls in the College of Surgeons. He kindly reports to me: "I am certain that the skull of the giant O'Brian is of about the same capacity only as that of the individual of ordinary size that stands by his side. From all that I could collect from repeated examinations of very many skulls from nations all over the world, I came to the conclusion *that the size of the skull did not, for certain, indicate the stature of the man.*"

It is in sacred Scripture that we find many accounts of giants, and the following are some of the principal expressions made use of. Thus we read:—"There were giants in the earth;" "We saw giants, the sons of Anak;" "Og, King of Bashan, remained of the remnant of giants;" "Bashan, called the Land of Giants;" "The lot of Judah at the Valley of Giants," &c. &c. The chief of these ancient giants were—Og, the King of Bashan, and Goliath of Gath. Of the height of the latter, viz., 6 cubits and a span, there has been great dispute; one account making him to be 10 ft. 6 in., another 9 ft. only; while Bishop Cumberland (in his "Jewish Weights and Measures") makes him to be

above 11 ft. Again, Og, the King of Bashan, is said to have been 15 ft. high. As to the antediluvian giants, some commentators have gone so far as to say that these "Nephilim" or giants were not so much giants in physical stature as great atheists and monsters of impiety, rapine, and all wickedness. "Anyhow," as says the learned Dr. Derham, in his "Physico-Theology," "be the matter as it will, it is very manifest that in both these places (the giants before the flood, and the giants seen by the Israelitish spies) giants are spoken of as rarities and wonders of the age, not of the common stature."

I cannot conclude these remarks without stating that I do not believe we of the present race are smaller than men of ancient times, be they post or ante-diluvians; and I would feel much obliged if any readers of this book would kindly forward me any accounts of Giants they may happen to have, as the information on this point is so widely diffused, and has not as yet, I believe, been ever hitherto systematically collected.*

* Female giants or giantesses are still more scarce: the only one I ever saw was a Polish giantess. I found the giantess, in the spring of 1863, at Savile House, Leicester-square (opposite where the Great Globe formerly stood). She called herself the Countess Lodoiska. She was a remarkably fine young woman, of about twenty years of age, and of a pleasing appearance and manner, and, according to the handbill, she is "7 feet in height, weighs 276 lb., and can without difficulty lift 160 lb. or 170 lb. with one hand." Considering her great stature, she was not clumsy or inelegant-looking. She is a native of Warsaw, and her parents and family, I am informed, do not exceed the stature of ordinary men.

THE FEMALE NONDESCRIPT, JULIA PASTRANA, AND
EXHIBITIONS OF HUMAN MUMMIES, ETC.

FROM giants I now proceed to other human Exhibitions. It is seldom, very seldom, that we are invited to see modern mummies, though ancient mummies are not very uncommon. In the month of February, 1862, I received an invitation to examine a great natural curiosity described as "The Embalmed Nondescript," then being exhibited at 191, Piccadilly (in the rooms which had just before been given up by the Talking Fish); I hastened to ascertain its nature.

Immediately on viewing it I exclaimed "Julia Pastrana!" "Yes, sir," said the proprietor of the exhibition; "it is Julia Pastrana." It may be remembered that some time ago (in 1857) a woman was exhibited in Regent-street, who was remarkable for the immense quantity of long black hair that grew on and about her face. An idea was also attempted to be promulgated that she was not altogether human; and the story was that she had been found among the tribe of Digger Indians who are reported to inhabit various parts of New Mexico, Oregon, Utah, and the Gulf of Mexico.

Her name was Julia Pastrana. It appears that she died in — at Moscow, in Russia, and it was stated she was embalmed there by Professor Suckaloff, and the mummy thus prepared was exhibited in 1862.

Having had some experience in human mummies, I was exceedingly surprised at what I saw. The figure was dressed in the ordinary exhibition costume used in life, and placed erect upon a table. The limbs were by no means shrunk or contracted, the arms and chest, &c., retaining their former roundness and well-formed appearance. The face was marvellous; exactly like an exceedingly good portrait in wax, but it was *not* formed of wax. The closest examination convinced me that it was the true skin, prepared in some wonderful way; the huge deformed lips and the squat nose remained exactly as in life; and the beard and luxuriant growth of soft black hair on and about the face were in no respect changed from their former appearance.

There was no unpleasantness, or disagreeable concomitant, about the figure; and it was almost difficult to imagine that the mummy was really that of a human being, and not an artificial model.

I well recollect seeing and speaking to this poor Julia Pastrana when in life. She was about four feet six inches in height; her eyes were deep black, and somewhat prominent, and their lids had long, thick eyelashes; her features were simply hideous on account of the profusion of hair growing on her forehead, and her black beard; but her figure was exceedingly good and graceful, and her tiny foot and well-turned ankle, *vice versa* perfection itself. She had a sweet voice, great taste in music and dancing, and could speak three

languages. She was very charitable, and gave largely to local institutions from her earnings. I believe that her true history was that she was simply a deformed Mexican Indian woman. As regards the history of the embalment, I fear (in fact I know) that although beautifully done, there was great rascality connected with the whole business, but I am not at liberty to mention the particulars.

Julia Pastrana being a Mexican, and being embalmed by Europeans, is rather a curious coincidence, for in her own country the process of embalming is carried on, and this in a very curious manner. Mr. Louis Fraser tells me that the original Indians, who live at or near Zamora Equidor, on the east side of the Cordilleras, take trophies of their enemies in the following manner: they take *the skin of the whole head* (hair and all), and by some process, known only to themselves, reduce it to about the size of a man's fist; the hair, ears, and all are preserved (there is no bone left), and the features are like those of miniature Aztecs.

These curious little heads are carefully wrapped up and preserved over the fireplace; they are much prized, and on no account are parted with to strangers. A specimen of this kind was exhibited in the Exhibition of 1862. I was very anxious to purchase it, but the owner asked *only 300l.* for it; he afterwards came down, and reduced his price considerably. I was exceedingly sorry I could not afford to buy it; it certainly was a gem of a head; I should be curious to know, even now, where it is.

In my first series of "Curiosities of Natural History," I gave an account of an exhibition of a modern mummy

from the Guano Islands; the name of the man who was preserved in the guano was "Christopher Toledo;" since then I saw, in a penny show in the streets of Edinburgh, another guano mummy, described in the handbill as follows:—

"This mummy was brought to Liverpool from Possession Island, western coast of Africa, by Captain Dunlop, in the schooner Echo, from Greenock.

"The hair, teeth, whiskers, moustaches, hair on legs, finger-nails, toe-nails, every part is correct as when alive, and is in a perfect state of preservation. Also will be shown the shirt, stockings, and blanket in which he was buried, and the board which marked his grave on the island, with the date of his interment.

"It is shown more to prove the preserving qualities of the guano than from any desire for emolument on the part of the proprietor." (?)

I examined this specimen carefully. On the board (which was made of oak) were rudely carved the words, "Peter Creed, 1790."

The proprietor was exceedingly proud of his mummy.

"There is not a scratch upon him," said he; "he is just as perfect in the back as he is in the front. He is as good as a pension to me as long as he sticks together, and what's good for him is good for me. I cleared 21*l*. in eleven nights with him (rather against the scientific sentiments of the handbill this, thought I). As for Christopher Toledo, I know him well enough; he did well enough at fust, but he's all going to pieces now, he is; he ain't no use as a scientific mummy now; the more's the luck for me as long as my Peter Creed holds together."

A friend of mine in the merchant service, about two years since, brought back with him from Egypt, as a speculation, three mummies. Immediately on their arrival in London, he asked me to examine them. They were two males and a female, in a remarkably good state of preservation, the hair, nails, skin, &c., being dry and hard like boards, and the features in two of the specimens distinctly visible. They did not appear even to have been wrapped in bandages, but to have been submitted to the process of embalming, and then allowed to dry. I fancied, from their appearance, that they had been embalmed by the ancient Egyptian priest-surgeons, after the following manner, as described by Herodotus as one of the least expensive manners of embalming: "They fill all the intestines with cedar oil, without either cutting into the abdomen or removing the viscera; then preventing the egress of the injected fluid, they salt the body for the fixed number of days, and at the end of that time they let out the cedar oil, the power of which is such that it brings out in it both the intestines and viscera; it consumes the flesh, and the skin and bones alone remain. This being done they return the body." My friend described to me the various adventures and escapes he encountered in bringing over his specimens, it being very difficult to obtain mummies of any kind, now-a-days, in consequence of the Egyptian government having forbidden them to be taken out of the country.

Among other plans he adopted to pass the authorities who came on board, he placed the three mummies in the berth where the sailors usually sleep, and covered them up with rugs, &c., as though they were tired sailors

taking a nap; and if I recollect right, he told me that a friend who was partner in the mummy venture lay down with them.

When the officials came round, the partner pretended to wake up out of sleep, and, sitting up, yawned and rubbed his eyes as if half awake. The deceit answered capitally; the officials, thinking that the three mummies were three more tired sailors, did not examine further, and so the mummies were passed.

In due time these mummies arrived at Liverpool, and the question arose as to how to sell them to the best advantage; so the owner put it all about the town that some wonderful mummies had just arrived, and were on board the — ship, in the docks. A paragraph even got into the local newspapers to this effect, and this was just what they wanted; for a showman who had an exhibition in the town, reading the account in the newspaper, immediately came on board the ship and made a bid for the mummies; the price, however, was not high enough.

The next day the showman came again with a further offer, which, however, was not accepted. To make him more desirous of obtaining these curiosities, my friends found out where his show was situated, and for two or three evenings, remained smoking their cigars about the show, and paid boys and idle people they found about a small fee to go to the door of the show and ask to "see the wonderful mummies which had just arrived."

"We have not got them yet, sir," was the showman's answer.

"What? not got the mummies! never heard such a

thing. No mummies! Can't go into the show," said the visitor.

The fact of so many people coming, night after night, so quickened the showman's appetite that he made a higher bid of several hundred pounds, which offer, foolishly, not being accepted, the owners brought the mummies up to London.

The last thing I heard of them was from my friend, who told me that he had left his mummies at his lodgings while he went on another voyage; when he returned he found his landlord had got into trouble, and had pawned the three mummies for 10*l.* at some pawnbroker's by the Docks. Reader, if you are very anxious to have them, now is your chance of getting mummies cheap.

A curious case relative to mummies was, not many months ago, brought into the County Court, at Knaresborough, in Yorkshire. A gentleman was sued because he would not pay for a clock. It appears he bought a mummy-case for 5*l.*, and had it converted into a handsome clock-case for his hall; a clock was put into it, but "it would not go," and shortly went as dead as the mummy which had formerly been deposited in it. Then came the lawsuit. The country folks said the clock would not go "because the ghost of the mummy haunted it." The learned judge took a different view, and decided that the clock was a bad one. I wonder if the clockmaker put up a "skeleton clock" in the mummy-case?

Everybody has seen the mummies in the British Museum. The following was told me by a friend relative to them:—One day a sharp-witted Londoner was coming out of the Museum, when he saw a country-

looking visitor gaping up at the Museum, and evidently half-afraid to go in.

“Is the Museum open to-day?” said the countryman.

“Open to-day,” said the Londoner; “certainly not.”

“Why not?” said Johnny Rawbone.

“Why not? is it possible that you have not heard the news? *Why one of the mummies is dead.* You can’t go in to-day.”*

* This may or may not be an old story: anyhow, I tell it as it was told to me.

THE WOOLLY WOMAN OF HAYTI.

ABOUT the same time that Julia Pastrana was exhibited in London, I saw an advertisement that "The Woolly Woman of Hayti" had arrived in London. Now there are certain cases where "too much of a good thing" becomes a nuisance and a bore. The female sex, from time immemorial, have been entitled to the beauty and ornament which long hair affords to the human figure. But it is just possible for the hair to grow so long that it becomes a deformity; and "The Woolly Woman of Hayti" was a good illustration of this. When I paid my visit of inspection I confess I was rather disappointed to find, instead of a beautiful fair young creature, with long flowing silken hair (as represented in the handbill sent me), a poor shrivelled old woman, as black as a crow, with hair as crisp and as woolly as the covering of any ordinary sheep; nevertheless, I did the civil to her as well as I could, considering she speaks no language but her own, whatever that may be. " "

Her name was Antoinette, and she is said to have

come from Hayti. Nothing is mentioned about this place, but it may be as well to remind the reader that Hayti is one of the great Antilles, or larger islands of the West Indies. What the aborigines of this place may be, I know not; anyhow, Madame Antoinette was, in my opinion, a negress, or a mulatto with much negro blood in her; she was fifty-eight years of age, and her hair did not begin to grow till about ten years before I saw her. It presented a long, thick, plaited mass of wool-like hair, which she allowed to hang down on her right side. It grew nearly entirely from the top of the head, the hair on the sides of the head not contributing much to the general stock, but rather forming independent hair-like fringes.

I measured the mass of hair carefully, and found it to be four feet eight inches long; it grew in a thick mass (fifteen inches in circumference) from the crown of the head, and then separated itself into numerous small cords, the thickness of packing-twine, and these cords again united to form literally ropes of greater or smaller dimensions. About the centre of its length the hair, when spread out, was seven inches broad, and twelve inches in circumference as grasped by the hands. At its end it terminated in rather abrupt and separate screws of hair, like a bunch of lace bobbins; it is said to continue to grow every year.

Antoinette obligingly coiled her hair up on her head, to show me her coiffure when in private. Thus placed, her hair formed a sugar-loaf cone of three turns and a half, measuring twenty-nine inches at its base and thirteen inches in height. The total weight

of the hair was said to be four pounds, but I do not think it weighed as much as that. The hair appeared to be a genuine growth from the head, and from its very commencement to its end the fibre twisted itself tightly (corkscrew fashion) upon itself, rendering it elastic and springy when extended, as is the case with most negro hair. It was quite clean, and was carefully tended every day. No reason for this superabundant gift of nature can be given; anyhow, poor Antoinette ought to be much obliged to nature for her kindness in providing her with means of gaining a subsistence, such as it is.

My own idea about the actual nature of this hair is, that it is a form of disease, called "*plica polonica*," a disease not uncommon among the Jews of Poland. The hair becomes matted thickly together, in fact, felts itself naturally. We have three specimens of *plica polonica* in the College of Surgeons, all three cases being in Europeans. I believe the case I have above described is simply *plica polonica* in a negress.

A modified form of this disease is not uncommon in animals, particularly in sheep-dogs, and in some kinds of long-eared pet dogs.

I well recollect an exhibition at the Egyptian Hall of "An Arctic Dog taken from an Iceberg." This was an ordinary dog—a poodle, if I recollect right—who had *plica polonica* very badly, the hair, hanging down in thick pear-shaped festoons. The dog of course had never been on an iceberg, unless somebody must have put him on and taken him off again.

The poor "Woolly Woman of Hayt" did not, I fear, make her fortune in London, and the beginning of her

downfall was a squabble with M. Brice the giant, of whom I gave an account some few pages back. Brice had a sort of "Indian Temple" set apart for himself at Cremorne Gardens, and he had it all to himself for a long time.

One day, on arriving at the gardens, he found preparations being made to divide his Temple in half, and he learnt that "*La Femme à la long Cheveux*," or "The Woolly Woman of Hayti," was about to have his apartments, and the giant was most indignant at this intrusion, and told the authorities that he would leave the place immediately if the intruder was not removed. Matters were settled in favour of the giant remaining undisturbed in his Temple, and the poor "Woolly Woman of Hayti" took her departure, I believe, to Paris, where she was shown as the "Wild Woman of the Woods." This is the last I heard of her.

THE AUSTRALIAN FAT BOY.

As opposition to "The Woolly Woman of eighty," as the cockneys called her, there arrived in London "The Australian Fat Boy." There was no humbug about *the name*, for at least if ever there *was* a fat boy, this is the individual, and I would have backed him to be fatter than *the* "Fat Boy" in Pickwick, who has been the type of the species for many years past. The Fat Boy's name was William Abernethy, *alias* "Fat Billy," or "The Australian Marvel;" he was born from Scotch parents, at Sydney, New South Wales, on the 29th of November, 1848, and a copy of his register of baptism, certifying this, was shown. The following were his measurements: Weight, 23 stone; height, 5 feet 6 inches; round the shoulders he measured 62 inches; round the waist, 57 inches; round the calf of the leg, 24 inches; round the thigh, 39 inches. "He was a very small child until about thirteen months old; he then commenced accumulating fat, and went on increasing until he attained his present development. He was very abstemious and temperate in his habits, and intelli-

gent and lively in his disposition." I may say he looked the very picture of good-nature—most stout people are good tempered—and his temper seemed to correspond with his obesity. The growth of fat seems to increase rather than diminish annually, and if he continues to grow in height as well in size he bids fair to become a modern Daniel Lambert, and would do well to form a heading for Mr. Thorley when he invents a new kind of food to fatten bipeds as well as quadrupeds. Cases of enormously stout people—like "Fat Billy," as this "Australian marvel" is familiarly called—are not very common, though they are sometimes seen at fairs. I wonder Mr. Banting does not try his hand at "leaning" one of these specimens.

The Fat Boy had seen some adventures, and some "society" before his arrival in London, for I learned that he had lately formed one of a company, the proprietor of which exhibited *some* of the varieties of the human species, viz., this "Australian Billy," a whiteheaded albino, and a dwarf, fifty years old and not four feet high. The whole company, together with the master himself, a black man, all lived together, day and night, in a one-horse caravan. A nice sample of the varieties of the human race they must have made.

THE SPOTTED CHILD.

I ALWAYS go into caravan exhibitions at fairs, &c. At the Windsor Fair, in 1861, I saw, hanging outside a show, a large picture of "The Spotted Child, to be seen alive."

I paid my penny, but as the Spotted Child did not come in just at the moment, and I was in a hurry, I paid six-pence for an immediate and private view of the Spotted Child; and the woman who had charge of the show brought out from behind the curtain an exceedingly pretty little flaxen-haired, blue-eyed, English girl, dressed in ordinary costume, about six years old. I could see spots about her, but her mother soon showed me that her body, arms, and legs were all covered with spots of different shapes and sizes.

I examined these spots carefully with a pocket magnifying lens, and had no hesitation in saying that they were the result of no skin disease at all, which I thought before I saw the child might have been the case, but were simply the marks made by a strong solution of nitrate of silver which had stained the skin a jet black, and which showed up well on her white skin. I could perceive, with a magnifying glass, even the marks of the brush at the edges of the spots.

Ladies may like to know that the application of the nitrate of silver would not in any way hurt the child, and that they would soon wear off. The mother was an ingenious woman thus to turn her child to account without in any way injuring it.

THE NEW ZEALAND WARRIOR CHIEFS.

THERE seems to be innate in the human mind a love to talk of the doings and sayings of its fellow-creatures. We find this in all societies and in all conditions of mankind. The more limited and defined the range of the observation of the talker, the more microscopic he or she becomes in the determination of the qualities, good or bad, of other folks. When, however, we take a large view of mankind, this passion for personal inquiry assumes a more important feature, for we pass at once into the science of ethnology. London, being as it were the centre of the civilized world, we who live therein often have the privileges of free intercourse with the various inhabitants of this great and wonderful world. We oftentimes have the opportunity of looking on the features of Chinese, Hindoos, Turks, Africans, Americans, Arabs, Mexicans, Esquimaux,* and other children

* I well recollect obtaining my father's permission to ask to lunch at the Deanery, Westminster, three Esquimaux that were being exhibited in London. Their names were Tickaluck-too, Hucklanjoe (and I forget the name of the third). They were nice, quiet, agreeable people, and were wonderfully struck with the Abbey. The thing among the monu-

of Shem, Ham, and Japhet; but it is rare that we have a chance of shaking the hand of friendship with the aboriginal inhabitants of our antipodes,—the Australian aborigines and the New Zealanders. It was with great pleasure, therefore, that I received, in July, 1864, an invitation from Mr. Wilde, of the Alhambra, Leicester-square, to be present at the first public performance of the Maori warrior chiefs.

Before the New Zealanders came on the stage, I gained the following information about them. Their names (which are, I believe, their true names) and descriptions were as follows:—

TOMATI HAPIMANA WHARINAKI, a chief of great rank and influence of the Tawera tribe in the Bay of Plenty—ancestors very great warriors—a magistrate of New Zealand.

PAURO WHAKAHEKE, a chief of rank and influence of the Tawera tribe, Bay of Plenty—descended from a long line of ancestors, renowned for warlike deeds and great prowess in arms.

PENE TUTU, a chief of rank of the Negato Kahungunu tribe, East Cape.

HENARIPIRI METE, half-caste—of the Ngapuhi tribe of Hokiangu—descended by his mother's side from ancestors of renown. His uncle is a magistrate of Hokiangu.

RANGATIRA MOETARA, a young chief of great rank and influence of the Rarawa tribe of Kaitiau, Bay of Islands district. Descended from an illustrious line of ancestors. His uncle is at present a magistrate of his native district, and a man of great influence amongst his people.

APERAHAMA PUNGATURA, a young chief of the Four Ngatihinetu tribe, of great rank, and from the Waikato country, cousin to the Maori King, Potatatau II.

Being anxious to see somewhat of the world, they were

ments was the figure of a ship; they also fell greatly in love with a marble anchor. I shall never forget their amazement and excessive delight when they first heard the organ's notes rolling along the aisles; the effect was very remarkable upon these poor but innocent people.

about to make their travels through England and the Continent. They hoped by means of their performances to be enabled "to work their way," and if successful, to take some golden trophies of their work to their wives and children in New Zealand. They had also visited Australia, where they appeared in public at Melbourne.

When the curtain rose we saw these fine specimens of the human race paraded before us. They wore their native dress, which consisted simply of a sort of kilt, their arms, chest, &c., being without any ornament, save and except the tattoo marks worked into their skin.

They began their performance by the "launch of the war canoe," far different from the launch of one of our iron line-of-battle ships, but yet accompanied with such yells and eager cries as would make one dread an encounter with them in an open boat at sea, and like enough to frighten any opponents ignorant of the use of fire-arms. Then followed a dance, which I understood to be "the Maori double war-dance;" that is to say, a dance not unlike the mummer's dance in England, only twenty times more vigorous, by means of which those who are about to fight work themselves up into a fit and proper state of courage and daring. So admirably, indeed, did they perform this part, that they really *did* work themselves up into such a state of excitement, and my friend who was with me whispered quietly in my ear (we were close to the stage): "I say, friend doctor, we had better be off, for upon my word I expect these fellows' instincts will overcome their rationality; and if they do not 'raise the hair' of one of us it will be a wonder, and a nice ornament the Bucklandian scalp would be for a New Zealand village pole."

•

However, on a given signal, they (to my friend's relief) sat down and turned on their steam to the singing of a song. Ladies, cease your melodious Italian airs, your English and your Scotch ballads, and if you wish to cause a *real* sensation in your family circle, learn by heart the Maori song; perform it when next you go out, with its very peculiar action of trembling the hands one over the other in the air—the chorus of “Chip arrh, Wahi ah harr, Ugh ah ug Ah ah yee ourahh,” and its gesticulations of pity or defiance, as the sentiments of the words of the song suggest, and I think you really will make people stop talking even in the most crowded evening party. This song, I understood from Tomati Hapimana Wharinaki, who speaks English pretty well (having attended a missionary school in New Zealand), was the Maori version of “God save the Queen.” From what I heard of it, I do not think our own National Anthem need fear dethronement from the musicians of New Zealand.

Then followed Maori games of ball, and Maori wrestling, in which the fine muscular development and snake-like agility of these well-built men was admirably displayed, and then a wrestling match—a magnificent display of real genuine trial of strength of bone and muscle, man against man, power combined with activity, quickness of eye with gladiatorial ferocity. I should much like to see a match between the Cumberland champion and Henari Riri Mete, who managed to throw three opponents one after the other, having a drawn battle with the gigantic Aperahama Pungatura, who stands about 6 feet 2 inches.

The performance over, I was introduced to the Maoris

one by one, and I was so much pleased with them that I invited them to lunch the next day at Albany-street. When they arrived it was most strange to see how these men, but a few hours since fierce and warlike, were now as shy and timid as children. At their first introduction they did not feel at all at home, and, what was worse, I could only show my willingness to be agreeable to them by gesticulations and such signs as I thought would express my ideas. Conversation, under such circumstances, is not the most lively, and in the present instance was confined principally to *one* word, "kāpai," which means "very good." My English friends who I asked to meet the Maoris at lunch were in a somewhat similar condition. However, if we did not talk, some of us managed to eat, for the New Zealanders consumed fourteen pounds of roast beef in less than no time. When eating ceased, I bethought me of what was to be done to amuse my guests, so I sent off a message to Mr. Wareham (the well-known dealer in arms, weapons, old china, &c.), to ask him to bring, from his shop at the corner of St. Martin's-court, Leicester-square, everything he had from New Zealand: he kindly came up at once with a huge bundle of clubs, spears, paddles, knives, and weapons of all sorts. I stood at the head of the table and produced these one by one. When the article I showed my guests was of true New Zealand manufacture, they instantly recognized it, and stretched out their hands towards it with glee and a shout of joy. When the club or spear was *not* from New Zealand, they took no notice whatever of it. I also brought down an old, but fine edition of Captain Cook's Voyages, and they examined the plates of New Zealand weapons, war canoes,

&c., with evident pleasure, conversing with each other about the prints, and evidently mentioning the facts and anecdotes which, alas! I could not understand any more than they could understand my questions about them. The figure of the big war canoe especially attracted their notice, and "kapai, kapai," was uttered simultaneously by all.

During lunch I had a capital chance of examining the tattoo marks, which they call in New Zealand "moko." The faces of Rangatira and of Tangatara were perfect models of tattooing, and would form capital patterns for ladies' crochet work. On the whole, I think the deep-blue lines about the lips, face, and nose of Henari Piri Mete were the most elegantly designed and tastefully executed. Tangatara explained how the process of tattooing was done with a sharp instrument, a little hammer, and a series of tappings, by which the grooves were made. All the men had their ears bored, not little punctures such as we see in the ears of our belles at home, but great big holes that can be put to real service—sort of châtelaines, in fact—on to which any article, anything not too heavy that will serve either for use or ornament can be attached. Only one of them, the above-mentioned Henari, wore his earrings. These consisted of two long strips of black ribbon, and by way of a setting to them were fastened two beautiful ivory-white sharks' teeth.

“
Much as you may laugh, ladies, I assure you these white sharks' teeth looked very pretty, and formed a good contrast to the peculiar dark brown colour of the skin. Ye brunettes, if you wish to show off your complexion, wear sharks' teeth for earrings.

Seeing that I was much interested in tattooing; Pungatura, when I offered him a cigar and a light, called me aside to the window, and with a most serious face (for he was quite in earnest) whispered in broken English in my ear, "You good to me; me moco (tattoo) your face; me you tattoo beautiful as Rangitara." I thanked him much for the compliment, but declined his services, though I confess I was greatly inclined to let him operate on my arm, just for the fun of the thing.

While entertaining these tattooed New Zealanders, I could not help thinking how fortunate it was that times were changed, and that we no longer knew New Zealand alone by the mummy heads of its inhabitants, but were able to welcome their whole bodies, with their heads safe and sound in their proper positions on those bodies. The head of a New Zealander, if it were well preserved and handsomely tattooed, is worth at the present time about five pounds; but these specimens of stuffed humanity are gradually getting very rare. In former times the New Zealanders used to murder one another in order to sell the heads of the victims to captains of ships. If the murdered man was not tattooed enough before death, the face was further ornamented after death. The demand for this strange kind of saleable goods has luckily become less, and the heads are therefore rarely seen except in museums which have been established many years.

The late Dr. Kidd, Regius Professor of Medicine at Oxford, had in the Anatomical Museum at Christ Church the heads of two New Zealanders, one engraved *before*, the other *after* death; and he pointed out to his class

the difference, viz., that in the former (where the tattoo had taken place *after* death) the markings presented deep grooves like the scorings on a leg of pork before it is cooked, because the cuts remained just as they were made, the skin not growing over them; whereas the latter (where the tattoo had taken place before death) presented the ridges filled up and covered over with skin, the skin having had time to grow after the operation had been performed.

The luncheon over, knowing that the New Zealanders are very fond of public speaking, I called for silence, and made them a speech, in which I told them how glad we were to see and to welcome them so far from their Maori homes, though it was at the same time a satisfaction to know that they were *not* the Macaulay New Zealanders, who one of these days are to gaze on the ruins of the great metropolis from London Bridge.

Thanks were returned by one of the party, familiarly known by the name of "Dicky;" and friend Dicky made his speech very well, his actions showing that he really meant what he said.

After lunch we adjourned upstairs to smoke; the tallest of the men put on one of the 2nd Life Guards' helmet and cuirass and sword, and a splendid fellow he looked. All went well, but at last a catastrophe suddenly took place. I was showing my guests my curiosities. They recognised a harpoon and a picture of a sperm whale, and also some stone hatchets, &c., from New Zealand, when I thought of a present I had just received, and opened a box containing some thirty-six common slow-worms, and placed one on the floor.

In an instant the whole scene was changed; the New

Zealanders in a moment threw off their civilized manner, and were instantly savages; they looked first at me and then at the slow-worm on the floor, and then uttering loud yells and a sound which I conceived to be the war-cry, the whole party, all but one, went helter-skelter down the stairs back into the dining-room. The window was open, and away they went into the little garden like a pack of hounds breaking cover, filling the air with what the French sportsman calls "tapage d'enfer."

When out in the garden, they spread themselves, to my horror, all over the neighbours' gardens, taking the low fences like deer: two of them saw a parlour window open on to the garden, some few houses above mine, and ran to it for refuge. In the window, quietly sitting at her afternoon work, was a dear peaceable old lady. The flying Maoris heeded her not, but rushed straight for the window. The poor old lady, looking up suddenly, saw a couple of gigantic savages, with their faces tattooed, screaming and yelling as they charged down on her: the poor old thing was frightened out of her senses at this unwonted inburst of New Zealand savages into her garden in Albany-street, and was nearly frightened out of her life; and upon my word I do not wonder at it. I was very sorry that this should have happened, and was delighted when I saw the New Zealanders come away from the old lady's window, and endeavour to clamber over the wall into the Regent's Park. The Englishman who was with them was terribly afraid they would get over the wall, for he would have had some difficulty in getting them together again. However after a time, my fierce visitors became a bit quiet, and the interpreter went out into the garden and

told them that I meant no harm, and they must come back at once; so back they came, looking very queer at me, for I feared they imagined that I had got them into a trap, and wished to injure them with the snake-like slow-worm. I had no idea, of course, that the presence of this little harmless reptile would in any way be unpleasant to them, or I never should have dreamt of showing it to them. I imagined, at the time, that their fright proceeded from their taking the slow-worm to be a poisonous and deadly snake. I stated this in the "Field," but time proved that I was mistaken.

The account of my entertainment to the New Zealanders was printed in the "Field," and a copy of the paper went to New Zealand. Some months afterwards W. L. Willis, 14th Regiment, dating from Wellington, New Zealand, gave us the following information:—

"The fact is, there are *no* snakes in New Zealand, and, (with the exception of one spider, called Katipo, and an animal resembling a grasshopper, which lives in decayed wood, called Wacta) I believe none are poisonous. The real reason that the Maoris feared the slow-worms at Mr. Buckland's party was, that in their religion (and though the men may call themselves Christians, it must not be imagined that their old superstitions are by any means obliterated) all reptiles, as lizards, &c.—whether harmless or not—are, as they call them, 'Ngarara,' which conveys to the Maori mind the idea of the incarnation of the deity, powerful for evil. It was from their resemblance to lizards, the dread of them as 'Ngarara,' that the Maoris fled from them."

When the New Zealanders had made friends again with me, after the little difficulty about the slow-worm, we

had another glass of wine and a pipe of peace together, and they adjourned to the Zoological Gardens, where my friend Mr. Bartlett, the superintendent, very kindly undertook to accompany my new-made friends round the gardens. It was most interesting to see how these men, who have no mammal in their island bigger than a pig or a rat—horses, of course, where Europeans are—were amazed at what they saw. They gazed with wonder at the camels, they were silent before the lions, and were half-frightened at the elephant. We persuaded them to ride upon the elephant, Mr. Bartlett going up with them, and much they seemed to enjoy the ride *when once up*.

We then examined the zebra, with which they were highly delighted, our friends remarking that the zebra had tattooed his face. "He moko him face"—not a bad idea, by-the-way, as a zebra's stripes are not unlike tattoo marks; and afterwards looked at the rhinoceros, which they all agreed was a "big porka." "Big porka, me eat him."

We did not tell them what we were going to show them next, as we wished to try an experiment, and very possibly gain some information as regards the natural history products of New Zealand. Mr. Bartlett caused the "Kiwi," or apterix, from New Zealand, to be turned out of his house. The Maoris recognised him in a moment: "He kiwi, kiwi; he good eat, better than fowl and turkey; he make good pie; we hunt him at night with dogs in our country. Your bird very little; New Zealand kiwi much bigger; he kick hard with him leg." • • •

Of course Mr. Bartlett and myself followed this ac-

count up with leading questions about the Dinornis. "Ah! moa bird; he big bird, bigger than that much (pointing to the ostrich). He come out at night like kwi; he very difficult catch. My father see one once. Moa bird very scarce. Plenty him bones in river. Feathers moa bird in houses New Zealand." And this was about all we could learn of the moa. All the New Zealand party seemed to know the name "moa bird" well enough, and we were much pleased to get even as little information as this.

Time was pressing, and the Maoris were obliged to leave the gardens. We parted the best of friends, with the words "kapui, kapui," and a hearty shake of the hand all round.

I would beg to refer the reader to the Appendix, where he will find some notes of mine relative to this moa bird.

WANDERING MOUNTBANKS.

THERE are many semi-gratuitous exhibitions to be seen in the London streets, and at race-courses, &c.; in fact, to myself, at many public spectacles, the spectators are to me themselves the greatest show. As Pope has it, translating Horace's allusion to the Roman sports—

“Let bear or elephant be e'er so white,
The people, sure the people, are the sight.”

I never neglect any opportunity of learning how some of the more needy of the mixed multitude endeavour to gain a scanty living, and transfer a few coins from the pockets of their richer fellows to their own.

The Epsom Downs, on Derby-day especially, seems to be the assembling point of all the peripatetic performers for a hundred miles round; real vagabonds some of them; honest kindly folks others; but all anxious to make a harvest. I was gazing one Derby-day on the crowd, from the top of the 2nd Life Guards' drag, when I was startled by a sudden and most hideous noise at my

shoulder. Turning quickly round, I beheld a man with an enormous shock of wool-like hair, stuck out from his head like a New Mexican savage, who, holding his nose with his fingers, was producing, with marvellous intonation, the most unmusical bray of a donkey; he must have practised it for years, for it was louder and more discordant than the real donkey's voice, and the prolonged screech at the end caused many bystanders to put their hands to their ears in sheer despair.

Then a pale-looking man, with his hair cut quite short, and clad in a tight-fitting jersey, which seemed quite wet through, deposited by the door of the drag a washing-tub nearly half full of water. I could not imagine what he was going to do, till he threw into the tub a small coin, meant as a decoy for other contributions, and, pulling his short hair, said, "American diver, if you please." By dint of practice, he had acquired skill in fishing coins up with his lips: a performance not interesting to see, and anything but conducive to the longevity of the diver, whose head was sometimes submerged a painfully long time.

Next came a man, grim, dirty, and stupid, carrying a model of a coal-mine, and a placard on his hat, stating that he had been blown up by fire-damp, and had been disabled for future active work; the coal-mine was a little the worse for wear, and well polished at the corners, showing that he had lugged it about many a hundred miles in search of coppers, and here and there a stray bit of silver.

Following him came a man with an electric machine, and he gave shocks at the rate of a penny a shock, or three shocks for twopence; he did not get many

customers at the *latter* tariff, but one pocket of his old tail-coat seemed pretty heavy with subscriptions ~~at~~ this scientific experimental philosopher.

Bang! what's that? surely revolvers are not allowed to be fired in this crowd! there is the smoke, too, behind yonder carriage; there is no commotion, but I certainly heard a pistol go off. I will go and see what it was. Ah, master Jacko, it's you, is it? you too have come down, fiddle, bell, sword, musket and all—from London. Little, you care for sight-seeing; you are tired already, you clever little caricature on humanity; and I see you don't seem anxious to fire the gun again, and your sham fight with your master, as you hop round and round your board, is not so energetic as I have seen it!

"The fire-eater, or the celebrated living salamander," growled out a deep voice close under the wheel of the drag, while I was speaking to a friend. "Light up, Jim," said the wild-looking owner of the voice aforesaid. Jim forthwith put a tin penny plate on the ground, and, pulling some dirty tow out of one pocket, and some powdered resin out of the other, placed them both on the plate, and lighted them up according to orders. The living salamander coolly began cutting up his smoking and indigestible meal with a knife and fork, and, when sufficiently comminuted, ate it all up, bit by bit, hot, blazing, and emitting fumes of resin! Why he did not burn his lips and mouth I know not, and where he stowed it all away I am amazed to understand; certain it is, he brought none of it out again in my presence; he must have a pouch like a pelican somewhere in his throat, for immediately after his fiery meal he devoured

a hatful of shreds of paper, and then, making sundry grimaces, pulled out of his mouth a long roll of parti-coloured paper, a yard and a half long, coiled up in a beautiful tapering cone.

What an apparition ! surely it is a ghost making its way towards me among the wheels of the carriages. Not a word or a sound does it utter, and how carefully it glides along. Poor ghost, you must indeed be hungry, to allow your body to be converted into a walking advertisement ! The ambitious card engraver who hired you deserves some credit for the pattern of your coat ; cunning man was he who thought of clothing you in a long sleeveless garment, and sewing the business and visiting cards of his customers on to it, so that you look like a mountain of white, green, and other divers-coloured cards. Your head may have but little brains inside ; but, anyhow, the outside affords a fixed point whereon to fasten a huge card-board cocked hat, with a card weathercock upon it bearing the name of your employer the card engraver (whose name, notwithstanding all the trouble he has taken to impress it upon me, I forget). Poor ghost, we hope you are well paid for your labour !

A stout acrobat, dressed in dirty cotton garments, clears a circle, by means of flourishing a ball of some soft material at the end of a rope round and round his head, causing the spectators to clear off the course. The circle formed, "The Infant Hercules," a man *six feet high*, and with limbs like a giant, advances with would-be grace into the centre, and kisses his great red hand to the crowd, particularly to the occupiers of the booth opposite which he has chosen his arena. His pale, half-

starved looking wife brings him a cup and a heavy metal ball; he ties the cup on to his forehead, and then, jacking the ball high up into the air, catches it in the cup. The ball enters with a thud; the man staggers a little: never mind; he would not perform the trick if it really hurt him. He then takes two cannon-balls, the size of small Dutch cheeses, out of his sack, and tosses them about as if they were made of ehler pith; he makes them run up his arm to his ear, round behind his head, and down the other arm and back again; he causes them to jump up, by simply straightening his elbow-joint; he dances them on his feet while he lays on his back, and seems to delight in making them do everything that is contrary to the laws of gravity; there is no sham about it, for the cannon-balls are handed round for examination, while the poor wife collects contributions in an old theatrical cap with a dingy feather in it.

After turning his body into sundry positions, which one would have thought possible only for a man made of India-rubber to do, a foolish and dreadful trick with a needle next followed. He placed a bare needle, point uppermost, into the turf of the race-course, and then picked it up, by causing the point of the needle just to enter the skin of his eyelid, his body all the time being in the abnormal position of the Zawnee that stands for Z in the child's pictorial alphabet. Being invited to see that there was no deception, I satisfied myself on that point, and afterwards asked the man how he could practise so dangerous an experiment. •

He told me he had performed this needle-trick nearly twelve years, and that he learned it from a Dutchman.

I warned him of the danger should he slip. "He knew that," he said; but "he had a wife and family to support." Poor fellow, to be thus obliged to risk his life, I may say *several times a day*, on the chance of getting a few coppers!

Amid the din of the grinding organs, I hear a musical sound unknown to my ears, and find that it proceeds from an instrument consisting of piano wires tightly stretched on a triangular board; the player has a thin stick in each hand, with which he strikes the wires, producing melodious and musical notes, which might be pretty in a drawing-room, but which are quite drowned amid the thousand sounds of more obtrusive instruments and the hum of human voices. The poor man looks disheartened, his instrument does not take; and I fear me the performer on the musical glasses does not fare any better; the tips of his fingers, I see, are hard and horny, from perpetually playing.

One of the most curious race-course exhibitions I ever witnessed was the "stone-cracker." A man comes in front of the drag, and fixes a small square board, supported on a pole, into the ground. He then produces from a sack a stone. He places the stone on the board, flourishes his arm about in the air, and then bringing his closed fist suddenly down upon the stone, cracks it as though his hand was an iron hammer. I got the stone-cracker to turn the stones out of the sack for me to examine. They were ordinary stones, picked up by the road-side, generally about the size of a man's double-fist, and consisted of lumps of flint, limestone, and even granite. I picked out a bit of grey Guernsey granite (evidently a portion of our London street-paving

stone), and placed it on the board to be cracked. The stone-cracker gave it a sharp blow with his fist, and it fell into halves in a moment. I examined this man's hand. The portion of his hand which acted as the head of the hammer was the pad of flesh by the little finger which forms the outside of the hand. The skin, &c., here was formed, from frequent stone-breakings, into a solid horn-like mass, but his arm and forearm, did not seem to be particularly well developed, as we see in regimental farriers and blacksmiths.

I conclude, therefore, that the stones are cracked more by a peculiar knack of hitting the stone than by actual force. I have the bit of granite I saw broken by the stone-cracker in my Museum; it is nearly two inches thick. This curious performer boasted he could crack a milestone with his fist; and I believe it possible, if the stone was of oolite, and not over-thick in substance.

CATCH-PENNIES.

THE edges of certain pavements in London have become regular markets for semi-gratuitous exhibitions.

There used formerly to be a man, who stood in Leicester-square, who sold microscopes at a penny each. They were made of a common pill-box; the bottom being taken out, and a piece of window-glass substituted. A small eye-hole was bored in the lid, and thereon was placed the lens, the whole apparatus being painted black. Upon looking through one of these microscopes, I saw hundreds of creatures, which I at once recognized as paste eels, swimming about in all directions; yet

on the object-glass nothing could be seen but a small speck of flour and water, conveyed there on the end of a lucifer-match from a common inkstand, which was nearly full of this vivified paste. Another microscope exhibited a single representative of the animal kingdom, whose nature is parasitic to our own noble race, showing his impatience of imprisonment by kicking vigorously. I could not help admiring the beauties of construction in this little monster, which, if at liberty, would have excited murderous feelings, unfavourable to the prolongation of its existence. The sharp-pointed mouth, with which he works his diggings; his side-claws, wherewith to hold on while at work; and his little heart, pulsating slowly but forcibly, and sending a stream of blood down the large vessel in the centre of his white and transparent body, could also be seen and wondered at. When the stock of this sort of live game runs short, a common carrot-seed is substituted; which, when looked at through a magnifier, is marvellously like an animal having a thick body and numerous legs projecting from the sides; so like an animal, that it has been mistaken by an enthusiastic philosopher for an animal created in, or by, a chemical mixture in conjunction with electricity; at least, my father always declared that the insects created by the late Mr. Crosse were simply carrot-seeds.

I bought several of these microscopes, and determined to find out how all this could be done for a penny. I took them to Professor Quekett, and we examined them together. We found that their magnifying power was about twenty diameters. The cost of a lens made of glass, of such a power, would be from three to four

shillings. How, then, could the whole apparatus be made for a single penny? A penknife revealed the mystery: The pill-box was cut in two, and then it appeared that the lens was made of Canada balsam, a transparent gum. The balsam had been heated, and carefully dropped on to the eye-hole of the pill-box. It then had assumed the proper size, shape, transparency, and polish, of a well-ground glass lens. Our ingenious lens-maker informed me that he had been selling these microscopes for fifteen years, and that he and his family conjointly make them. One child cut out the pill-boxes, another the eye-hole, another put them together, his wife painted them black, and he made the lenses.

Not long afterwards, in another part of the town, I came across another microscopist. He did not sell anything, but merely charged a halfpenny for a peep. His apparatus consisted of a tin box, about the size of a common tea-caddy, placed on three legs, at about the level of a small boy's eye: these ingenuous youths being his principal customers. The fee being paid, the slide was drawn away from the peep-hole, and the observer addressed with the following words:—"Here, you see a drop of Thames water, which looks like a gullon; the water is full of heels, snakes, and hadders a-playing about and a-devouring of one another." It was filled with numerous little creatures, which, having very small bodies, have as a sort of compensation received very large Latin names from their discoverer. Many of them were swimming about, pursued by what appeared to be immense sea-snakes, who caught and devoured them. Others were quietly reposing on weeds, which looked like elm-trees, and all of them were perfectly

unconscious of being exhibited to the British public at a halfpenny a head. But this was not all: the exhibitor next brought out of his waistcoat pocket a small tin tube, and said, all in one breath, "There you see a flea chained round his neck with a silver chain he lays his higgs on the glass and I feeds him three times a day on my 'and the performance is now concluded."

Another man, in the optician line, has two tubes, like telescopes, placed facing each other. He asks you whether you can see through an inch board? Of course you say "No." "Then for a halfpenny I'll show you that you can." Accordingly you look through the end of one of the tubes, seeing through the length of the other, and for the benefit of the bystanders you are requested to read some printing placed at the end of the furthest tube. This is easy enough. He then places a thick board between the two tubes, and still you can read the printing, which you are again requested to do; having purchased the power on that occasion only of seeing through a deal board for the small charge of one halfpenny.

In Tothill-street, Westminster, on a Saturday night, a travelling successor to the glass-blowing exhibitions that had permanent patronage from the sight-seeing world in the days of Miss Linwood's exhibition may sometimes be seen, who goes his rounds to sell the products of his industry. A glass pen, a glass Neptune's trident, a glass dove fastened to the top of a pointed wire, so as to form a breast-pin, and a glass peacock with a beautiful tail of spun glass, are wrapped in a neatly-made brown paper bag for the sum of one penny.

Workers in iron also endeavour to catch an honest

penny. There is a man who sells for twopence a most ingenious contrivance for roasting meat. It consists of no less than five pieces of iron wire, which, when put together, are strong enough to hold up a good-sized leg of mutton. One of the pieces serves as a fastening to the mantelpiece, and the others are attached to it by one of the pieces aforesaid. The cook is enabled by a simple mechanism, not unworthy of a Brunel or Stephenson, to heighten or lower the meat according to the state of the fire. If the inventor of this apparatus had a chance, there is no telling how many benefits he might confer upon mankind, and, let us hope upon himself too, by his mechanical talents.

In Leicester-square, where penny-catchers most do congregate, razor-paste, at one penny a box, is sold by a dexterous shaver, who chops such large gashes in a hard bit of wood with a shilling razor, that he makes the wood fly about. He then passes the blunted instrument a few times over his magic strop; and, pulling a hair from his head, divides it as it stands erect between his finger and thumb, with the same ease that Saladin divided the scarf with his scymetar, and the Life-Guardsman, at an assault of arms, cuts a whole sheep in half with a broad-sword.

The paste is, very likely (and so is the razor), more efficacious in the hands of the proprietor than of the purchaser; nevertheless, it is a good pennyworth.

I am forming a collection of various articles bought for one penny in the London streets; and I would beg my reader not to pass by these ingenious, poor, hard-working people, but to give them a little assistance and a kind word of encouragement.

BARNUM'S BABY SHOW.

FOND as the English people are of comparing notes as to mutual progress, whether in Nature or Art, by means of public exhibitions, where samples of products are exhibited, compared with each other, and adjudicated upon, they have not yet arrived at the idea of exhibiting samples of *themselves*. Our American cousins have, it appears, no such notions upon the subject, for they *do* exhibit living specimens of their own nation.

Barnum, the king of exhibitors, having exhibited almost everything in creation which would bear exhibiting, has actually and positively duly advertised and invited the inhabitants of Boston to visit his Baby Show.

We have, from time to time, read in the public journals meagre accounts of this remarkable exhibition, which was believed to have existed by many—disbelieved by more. However, I have positive and good evidence of the fact; for a relation, lately returned from her travels in America, has kindly put into *my* hands the very bill of this Baby Show.

This remarkable document will, doubtless, be interesting to many of our English mothers, who, although they may not actually wish to become exhibitors, may like to know what chances are open to them should they feel inclined to avail themselves of them. I therefore give the bill in full, as it was posted outside Barnum's Museum:—

BARNUM'S MUSEUM,

Every Day and Evening this Week, commencing Monday, June 2nd, 1862.

GRAND NATIONAL

B A B Y S H O W !!!

100 BEAUTIFUL BABIES

Will be on exhibition for prizes, for which upwards of
2000 DOLLARS CASH WILL BE DISTRIBUTED
FOR THE
FINEST BABIES, TWINS, TRIPLETS, QUATERNES,
AND
FAT BABIES!

Amongst the Babies is one from Cincinnati, Ohio,
8 MONTHS OLD, WEIGHING BUT 1 POUND 7 OUNCES,
The smallest speck of living humanity ever seen. An ordinary finger
ring slips easily over its hand and arm to the elbow. No conception
can be formed of the exceeding diminutiveness of this little atom of the
human race, which is really the

GREATEST WONDER OF THE WORLD!

There are also
THIRTY-TWO PAIRS OF TWINS, FOUR TRIPLETS,
And numerous FAT BABIES, beside the great number of single Babies,
making it the

GREATEST GALAXY OF HUMAN WONDERS EVER BEHELD!!!

The Premiums will be distributed among the most meritorious by Lady
Judges of the highest respectability.

The Premiums range from 500 dols. ! 250 dols. ! 150 dols. ! 100 dols. ! 50 dols. ! down to 5 dols. ! and in all *over seventy cash premiums will be awarded!*

The Babies will be on exhibition every day, from 11 a.m. till 3 p.m., and from 7 till 8 p.m., in the following order :—

MONDAY, JUNE 2nd.—From 11 a.m. till 3 p.m., Babies of all ages will be exhibited. First premium declared at 3 p.m.

MONDAY, JUNE 2nd.—From 7 till 8 p.m. This and each other evening, Babies, Twins, Triplets, Quaterns, and Fat Babies, over 4 years of age.

TUESDAY, JUNE 3rd.—From 11 a.m. till 3 p.m., Babies under 1 year of age exhibited.

WEDNESDAY, JUNE 4th.—From 11 a.m. till 3 p.m., Babies from 1 to 3 years of age, and Babies from 3 to 5 years exhibited in two different classes. Premiums declared at 3 p.m.

THURSDAY, JUNE 5th.—From 11 a.m. till 3 p.m., all the Premium Children exhibited.

FRIDAY, JUNE 6th.—From 11 a.m. till 3 p.m., all the Premium Children exhibited.

SATURDAY, JUNE 7th.—From 11 a.m. till 3 p.m., all Premium Children exhibited.

All the Twins, Triplets, Quaterns, and Fat Children, as well as the Baby taking the highest premium, to be seen on the 2nd, 3rd, 4th, 5th, 6th, and 7th of June, from 11 a.m. till 3 p.m.

* * Ladies and Children desirous of avoiding the discomforts of a great crowd will do well to come early in the morning, and see the Museum and other Curiosities before the Baby Show commences. Not later than 9 or 10 o'clock.

Walker and Sneden's Self-rocking Cradles, highly recommended by Physicians, and also Dr Brown's celebrated Patent Baby Tender, have been provided for the use and comfort of the Babies.

My informant tells me that, according to the wish expressed in the bill, she attended early, but even then found the room crowded with visitors. The babies were arranged in two rows along the side of the room. The very tiny ones were held in 'their nurses' arms, who sat on chairs on the level of the floor; sepa-

rated, however, from too anxious admirers by a strong hand-rail.

Above, and at the back of the row of nurses, was erected a platform, and upon the platform were exhibited the elder babies, each one in a separate chair, and into which it was judiciously and carefully fastened, so that falling out was impossible.

Strange to say, these babies were very good and quiet; they did not tumble or twist about, or cry, or behave themselves in any way that did not become a baby exhibited in public. The fat babies were especially quiet, for they went fast asleep in spite of the crowds of people looking at them.

The "Cincinnati speck of humanity" was not well enough to be always on view; so, at stated periods, a bell rang, and it was brought out for examination. This poor little creature excited great curiosity among the visitors.

I wondered much that the poor babies did not cry; but I understand that American babies are not like European babies—they express no sentiments whatever till after they are three years old—they then develop themselves at a rapid rate.

No wonder, therefore, that, in their earlier babyhood, they are proud of coming so early into public notice.

Besides the "Baby Show," visitors were invited to examine the Living Whales, the Sea Lion, the Bear "Samson," the Albino Family, the Grand Aquaria, the Happy Family, &c. Admittance to *everything*, 25 cents.

“OLMAR WALKS WITH HIS HEAD DOWNWARDS.”

IN November, 1862, the London streets were placarded with the single word “Olmar.” This mysterious announcement time proved to signify that a performer bearing that name was about to become a candidate for public patronage. No clue being given in the advertisement as to the nature of his performances, I, of course, was anxious to see in what they consisted; and I now venture to give some idea of the, really terrific performances of Olmar.

The visitor, on entering the Alhambra in Leicester-square, noticed suspended far above his head a ladder, a trapèze-swing, and a square-shaped wooden frame, from the sides of which depend large rings. It almost made one giddy to look up from below at this gymnastic arrangement, which is about 90 feet above one's head; and one shuddered to think that a human being could possibly display feats of activity at such a height in the air.

However, at the appointed time, Olmar appeared; and, after a series of feats on the trapèze and on the ladder suspended in mid-air at this frightful height,—feats which make one's blood run cold to look at,—he began to walk with his head downwards. He ascends, this time to the square frame as before stated, at a height of about 90 feet from the floor of the building. On to the lower side of the frame are affixed rings (about large enough to admit a Dutch cheese), and of which there are nine on each side of the square. He surveys them for a

moment, and then, quickly reversing himself on the rope, places a foot in one of the rings, hanging *head downwards*. He lets go his supporting rope, places the free foot in the next ring, and so walks away with his feet in the rings, his head downwards, round the sides of this square. He goes along at a very good pace, and I observed he manages to twist his head up every now and then, to see that he does not miss the ring with his foot. This position was really fearful to behold. After ascending again to the ladder, he takes a terrific jump from one side of it, and, passing through the air the whole length of the ladder, catches hold of the other end on the outside; in fact he jumps the length of the ladder by passing *along its side* in the air—exactly the leap of one of the spider-monkeys at the Zoological—only that Olmar being a man has not prehensile feet nor a prehensile tail to assist him. He then twines *one* leg in the rope, which is now again brought within his reach, and he descends slowly and gracefully, with a twisting motion, to the earth again; and right glad I should imagine he is to get there once more safely.

These performances are most fraught with danger, imminent, literally, at every step. To go through them must require pluck more than human beings generally possess—nerves and limbs of iron, quickness of motion and thought, combined with steadiness and agility. Accordingly, we see all these characteristics well marked in the personal features of Olmar; and all that we can wish him is success, personal safety, and a steady nerve.

The performance concluded, I had a lengthened interview with Olmar, who kindly allowed me to make an

examination of his physique. He is not a tall man, but is all muscle and strength: the power of his biceps and forearm is tremendous; his wrist has amazing strength in it; his pectoral muscles project like the breast of a bird; the muscles of his back are like those in the figures of Hercules in the statues by Roubilliac in Westminster Abbey; his chest has a large capacity; and he weighs, with all this power, but 130 lbs. It was very curious, also, to observe how that certain muscles in the abdomen and back, not developed in ordinary persons, are very much developed in Olmar. They are the very muscles which are called into play when he walks on the rings head downwards, and plainly show us how that nature has provided muscles for the working of the human frame in whatever position it may be placed—even when the head is downwards.

Olmar tells me that his ladder is made of the best Jamaica lance-wood; the bar of the trapèze is $4\frac{1}{2}$ feet long, and 2 inches in diameter; the apparatus with the rings (which are iron covered with rope) is 90 feet from the floor of the Alhambra.

He has been eleven years learning to walk in the rings head downwards, and it was nine years before he had confidence enough in himself to bring it out. The great difficulty he experienced at first was to "keep the blood out of his head" when in this position, and it was ten months before he trained his head to it.

It is no trick, but simply a feat requiring great courage and coolness. When *near the ground*, he can walk along from 150 to 170 rings without difficulty. He showed me the amazing power of his foot; for when he bent the toes upwards, it was with difficulty that I could

force the foot down again. The tendons working the foot are like iron wires.

He learned gradually, as a little child learns to walk on the floor of the nursery; even now, he is obliged to practise by himself every morning. He considers his most difficult feat is balancing himself by one foot on the trapeze-bar (but the public does not know this), even when the bar is close to the ground. He knows no professional who can do it even now, the bar is so apt to slip away from under the foot, it is so unsteady, and trembles so much with his weight.

Olmar, I was pleased to see, was not inclined to "swagger" or be conceited about his performance: he acknowledges his danger; but long practice, perseverance, coolness, pluck, and strength, have enabled him to overcome this danger. He has never yet met with an accident; and trusts that his personal qualities, with great care in fixing the apparatus, will enable him to escape harm or injury for the future.

THE INDIAN ROPE FEAT.

IN "The Field" of October 29, 1864, I gave a detailed account of "The Davenport Brothers," and expressed my firm conviction, from what I observed, that the whole thing was a clever trick, and nothing whatever to do with what is called Spiritualism—whatever that may be—in fact, a modification of what is called "The Indian Rope Feat," and which I had described in "The Field" some years previously.

I was challenged to tie the performer of this feat into a chair with rope in any way, and with any number of knots, in such a manner that he could not get loose.

Accordingly I presented myself at the time and place appointed, and, half suspecting some sleight-of-hand trick, I myself provided several yards of very strong rope.

The performer, an intelligent and good-looking young man, sat himself in a common wooden kitchen chair, and presented me with *his* rope. I asked if he had any objection to my using *my* rope?

"None whatever," was the reply; "and you may tie me in any way, and with as tight knots as you please."

Having examined the chair to see that *that* was all right and above-board, I proceeded first to pinion the arms of the young man, who sat down on the chair—pinioning them, "Jack Ketch fashion," behind his body; I then lashed them (tied as they were) tightly, with many knots and twistings, to the back of the chair. I then tied his two wrists tightly to the legs of the chair, pulling the ropes, I fear, cruelly tight—as the man afterwards showed me where I had cut the skin; but he did not complain of this a bit, as he had offered me the challenge. I then, by means of "double half-hitches," fastened each ankle to the corresponding leg of the chair, then tied both legs together, finishing off the rope with an attachment to the back rail of the chair. I then tied up his body, twisting the rope round and round, and fastening it wherever I could get a chance. The performer was now indeed bound hand and foot, and could hardly move in any direction whatever.

A large linen extinguisher was then placed over him,

tied as he was, and I and the other spectators stood round, at a little distance, to see that no collusion took place. In *four minutes and a half* the performer gave the signal, the extinguisher was removed, and there sat the young man perfectly free and unbound, and the ropes at his feet.

I had tied him with seven pieces of rope (the usual number is four), and the seven pieces of rope lay at his feet, in no way injured or cut except at the places where I had cut them off the main piece; and I had taken the precaution to mark my own cuts, so as to know them again.

I had not the slightest idea at the time how the performer managed to loose himself; I fancy that he must use actual physical strength in so doing, as he seemed exhausted, and in a profuse perspiration.*

Soon after the above appeared in "The Field," the following notice was published also in "The Field," which I now quote. The writer I know to be a good observer, as well as a good writer. He tells us:—

"When I was at Dinan (Brittany) in 1833, a man came round the town under the permission of the mayor, headed by a drum—himself the most miserable object I ever saw, announcing that he was the "Living Skeleton," &c., and that he should exhibit himself that evening. A record of this is most likely at the Mairie to this day.

"We went to see him, and, amongst others, an English as well as a French doctor. He told us that he had

* The performer of this Indian rope feat again appeared in public at the time that all the world was talking about the Davenport Brothers; his object being to show that there was no spiritualism about the matter. Herr Tolmaque (for that was the name assumed by the opponent of the brothers) was good enough to show me how the trick was done.

sold his body after his death to the Hôtel Dieu, in Paris. I have inquired since there, but could never ascertain the truth of the assertion.

"He first requested us to attach the two joints of the thumbs together above the bone: this we did with very fine whipcord, so excessively tightly bound round that one would have thought that the little blood (if any) that might be in him would have burst out at the end. But no; he quietly wetted the fastening, and as quietly withdrew one of the thumbs therefrom, leaving one centre of the figure ∞ reversal.

"He did a variety of other experiments with padlocks, &c., and finished by requesting us to procure a moderately-sized chain (and a long one it was, too, somewhat stronger than a jack-chain). He was standing: with this the body, arms and all, were encircled, as tight as two men could possibly make them by placing their feet against his body. He made a remark to a gendarme present—"I suppose that if you had got me now in prison, you would think you were all right?"—when, by a sudden movement in the body, the whole of the chain fell to the ground."—H. G. (Paris.)

It is very simple, *when one knows it*. Of course, as Herr Tolmaque* bound me to secrecy in the matter, the reader will not expect me to explain how this feat or trick, whichever name one might give it, is managed. It is difficult to perform, and requires much practice.

* See Note, page 91.

THE PERFORMING BULL DON JUAN.

THUS far in my chapter on Exhibitions I have described matters relative to human performers. I venture now to pass on to another class, commencing with "Don Juan the Performing Bull."

The reader who, map and book in hand, has travelled with Livingstone, Galton, or, Gordon Cumming across the desert wilds of South Africa, cannot fail to remember many stories of the sagacity, intelligence, and wonderful obstinacy of the genus *Bos*—how that at one time they cowered round the midnight fire, seeking protection in man's presence from the roaring lion—how that at another time they snuffed the scent of water from afar, inspiring hope in the breast of the thirst-worn traveller,—or how, at a critical juncture, no application of the long leather "rheim" or rhinoceros-hide whip would make them stir one inch.

Man has ever used the ox as a slave—seldom as a friend or a pet. When the human race was yet young, the ox was made the type of civilisation, and on this plea was by the astronomers of old promoted to a place

among the signs of the zodiac, which honoured berth he has held to this day, "Taurus the Bull" being emblematical of settlement and culture—followed by Gemini the Twins, expressive of the fertility following agriculture, and the union of man in consequence.

I have been unable to find any record of one of the ox tribe having, before the year 1859, been trained to perform tricks—an art to which dogs, monkeys, horses, and "the talking fish" have hitherto alone attained. It was therefore with curiosity that I went to witness the performance of "Don Juan," the "performing bull," at the Alhambra Crystal Palace, Leicester-square.* Before the performance, I examined the bull, who was quietly chewing the cud in his stall. He is a little fellow of the Spanish breed, about 4 feet 4 inches high; his coat is jet black, and shines like the coat of a racehorse from constant care and grooming. His master, Dan Costello, informs me that he will be four years old next spring, and that he did not begin to train him till he was more than two years old. He saw him first in the island of Cuba, and took a fancy to him as a likely beast to turn out a docile pupil. He had previously tried several other bulls, with little success, before he found "Don Juan."

When the bell rung, the bull came into the arena with that long, heavy, swing-trot so peculiar to all the ox tribe. He was gaudily dressed with ribbons and silver knobs on his horns, a gaudy, red leather headstall on his head, a row of bells (such as are used for the French diligence horses) round his neck, and also round his body, which made a fine musical jingling as

* November, 1859.

he moved about. After trotting round the circus he came to the centre, and, kneeling down on both knees, put his head on the ground—a difficult posture for him to accomplish. This position was supposed to indicate a “camel.” He then jumped through hoops, and over thick, wattled hurdles, which, however, he managed generally to kick with his hind legs as he went over (he is a bit lazy, this Mr. Bull). He jumps over poles (painted like the pole of a barber’s shop), placed both separately and together. He goes down on his knees and walks half round the circus upon them, and a famous pace he goes shuffling along on his knees in the sawdust; but I am not surprised at this, as cattle in feeding on steep precipices often kneel down for safety and convenience in grazing. A box like a large milking-stool having been placed in the arena, the bull, at a sign (not a word of command) from his master, stopped in his trot, and, advancing to the box, put both feet upon it; he then walked round the box, keeping his fore feet still upon it; and it was curious to see him change them over and over as he makes the circle. A short staff having been fixed into the box, he puts his foot upon the top of it, and keeps it there for a minute or so, as if about to make an address to the public. After this he performs sundry minor pedestrian feats, much after the manner of a recruit at foot-drill; and when he has done all a large board is brought in, the bull’s footstool is placed upon it, and the bull, walking upon the board, allows himself to be lifted bodily up, on the board, and be carried by ten men round the circus, one foot on the stool all the time. The knowing brute balances himself as he feels the board shift from

side to side. He pricks up his great ears, stares about with his lustrous eyes at the people and the gaslights, and no doubt thinks himself a very fine fellow indeed.

Mr. Costello told me he was of a playful disposition, and thinks it great fun to do his tricks even when there is no audience. It was feared that during his voyage from America (where he has been performing) he would have forgotten his lessons ; but he had not, and seemed pleased to go to work again. His affection for his master is great, and he will not go through his tricks for a stranger. During his performance he now and then shook his great head, and whisked his tail about, as much as to show that, like other animals, both biped and quadruped, he had a will of his own. The reader will agree with me that it is much more agreeable to see a bull made a useful pet than to see him tortured and worried to death, as is done in the Spanish bull-fights, or rather bull-slaughters.

JAMRACH'S ANIMAL STORE.

IN March, 1861, I received a note from Mr. Jamrach, the celebrated dealer in living animals, that he wished me to come at once and see a curious sight at his establishment at 164, Ratcliff Highway, facing the entrance to the London Docks. Accordingly I went.

“ Well Jamrach, what now ? ”

“ You shall see, sir.”

He took me upstairs, and opened the door of a room, and there I saw such a sight as really made me start. The moment the door-handle was touched I heard a noise

which I can compare to nothing but the beating of a very heavy storm of rain upon the glass of a greenhouse: I cautiously entered the room, and then saw that it was *one mass*, windows and walls, of living Australian grass parakeets. When they saw me the birds began to chatter, and such a din I never heard before. I could hardly hear Jamrach's voice amidst the terrible din.

Advancing a step into the room, all the birds flew up in a dense cloud, flying about the room just like a crowd of guats on a hot summer's evening, their wings causing a considerable rush of air, like the wind from a winnowing machine. Such a lot of birds I never saw before in all my life.

"Why, Jamrach, *how many*, for goodness' sake, are there?"

"Well, sir, you see, two ships, the Orient and the Golden Star, came in from Port Adelaide, Australia; both ships had birds on them; I bought the lot, and have now *three thousand pair* of them. There are plenty of people about who would buy twenty, thirty, or a hundred pair, but I took the lot at a venture, and I am pleased to say we are doing very well with them, and we have not, as yet, lost very many. The Golden Star birds are the strongest, as there were not above twenty or thirty pair in a cage; the Orient's birds die faster, as there were from 200 to 300 pair in a cage. You see, sir, I have put them in *two* empty rooms;" saying which, he opened the door of another room, and there I saw another edition of the first room, viz., a living mass of these beautiful little birds. Jamrach had fitted up a series of common laths from the floor of the room to near the ceiling, the laths being one above the other;

and when the birds got a little quiet, there they sat all of a row—eight to the foot I counted—just like a number of our noble selves on the benches at a public assembly, making a *continuous* clatter and noise.

These grass parakeets are exceedingly pretty birds. Jamrach gave me a couple of dead ones. Their markings are as follows:—A lustrous green 'breast and body, yellow on the top of the head, and a species of beard on each side of the beak, pencilled with the most lovely violet; back of head and wings yellow, barred with black; tail blue, and body 'above the tail emerald green. They are about the size of a good big lark, and even when stuffed not altogether useless, as they would form a good ornament for a lady's hat. They are very commonly sold at the London bird-shops, and form very pretty additions to the drawing-room or aviary.

Jamrach having shown me the six thousand parakeets, asked me to go into his 'yard—an invitation which, of course, I accepted. In *one little bit of a stable-yard*, including the stalls and the loft, I saw the following miscellaneous collection of birds and beasts, all alive and well cared for:—One female zebra, one female wapiti deer, two llamas, four pairs of black swans, one fine jaguar, four emus, one kangaroo, four opossums (one being perfectly white), four pairs of curassow, one male axis deer, five wedge-tailed eagles, one pelican, one sea-eagle, one griffin vulture, two Magellanic geese, one Cercopsis goose, one pair Japanese pheasants, four pair masked pigs from Japan, one Virginian owl, one pair of porcupines, two maraboos; and, in the next yard, a fine pair of double-humped camels, a fine male yak from

Chinese Tartary, and a pair of lions from the park of the late Marquis of Breadalbane.

All these birds and beasts were for sale. *Where* Jamrach can find customers I know not: he is, however, in correspondence with almost every zoological garden, as well as the owners of smaller collections of living animals, throughout the whole civilized world, both in Europe, India, and America.

. Many folks think they have seen *all* the sights of London; but there are many curious and interesting places which are comparatively unknown, and ~~which~~ are well worth a visit. Lovers of natural history who wish to see this "head-quarters" of the animal trade," where wild animals and curious birds, &c., are received and distributed to all parts of the world, should certainly pay Mr. Jamrach a visit. He will get his customers anything, from an elephant or giraffe down to a love-bird or a tortoise.

PERFORMING FLEAS.

IN the month of July, 1856, I discovered an individual who for twenty years had devoted his life to the intellectual training of fleas. He carried on his operations in a little room in Marylebone-street, London. I entered, and saw fleas here, fleas there, fleas everywhere; no less than sixty fleas imprisoned and sentenced to hard labour for life. All of them are luckily chained, or fastened in some way or other, so that escape and subsequent feasting upon visitors is impossible. A little black speck jumps up suddenly off the table whereon the performance takes place—I walk up to inspect, and find that it is a monster flea attired “à la convict;” he is free to move about, but, wherever he goes, a long gilt chain, tightly fastened round his neck, accompanies him.

Occasionally he tries to jump; the chain, instantly brings him down again, strong as he is. If a flea be fastened to the end of an unbroken wheat straw, he will be strong enough to lift it right off the table on which it is placed. This discovery was first made by the flea proprietor, and made him turn his attention towards utilising the race.

One would think it were easy enough to procure troops of fleas, and to train them to perform; but it appears that neither is an easy matter. It is not easy to procure a lot of able-bodied fleas, and it is not every sort of flea that will do. They must be human fleas: dog fleas, cat fleas, and bird fleas, are of no use—they are not lively enough nor strong enough, and soon break down in their training. Human fleas, therefore, must be obtained, and our friend has created a market for them. The dealers are principally elderly females, who supply the raw material; the trade price of fleas, moreover (like the trade price of everything else), varies, but the average price is threepence a dozen. In the winter-time it is sixpence; and, on one occasion, the trainer was obliged to give the large sum of sixpence for one single flea. He had arranged to give a performance; the time arrived; he unpacked the fleas; one, whose presence was necessary to make up a certain number with, was gone. What was to be done? the vacancy must be filled. At last, an ostler, pitying the manager's distress, supplied the needful animal; but he required sixpence for it, and sixpence he got.

While I was looking at the performance there came in a fresh supply of fleas; a swarm of them, in a vial bottle, huddled all together at the bottom. The flea trainer gave them a shake, and immediately they all began hopping about, hitting their little horny heads against the sides of the bottle (which was held sideways) with such force that there was a distinct noise, as if one had gently tapped the bottle with the nail. These fleas were not very good friends, for they were perpetually getting entangled in masses, and fighting with

their tiny but powerful legs, and rolling over and over as if in mortal combat. It was not, however, a case of life and death; for I did not see one that was looking injured or tired after the *mêlée*.

I then observed one fact, which gave me great pleasure; namely, that fleas are at enmity with bugs. There was one bug in the bottle surrounded by many fleas; the poor bug rushed continually from one end of the bottle to the other, running the gauntlet of the assembled fleas; every flea he came near attacked him, and retreated immediately as though half afraid of him; the bug, overwhelmed by numbers, had the worst of it, and beat an ignoble retreat into a bit of flannel.

Fleas are not always brought to market in vial bottles. The best fleas are imported from Russia, and come over in pill-boxes packed in the finest cotton-wool. These fleas are big, powerful, and good workers. I wonder whether the Custom House authorities think it worth while to examine the contents of these pill-boxes. When our friend in Marylebone makes his annual tour into the provinces, his wife sends him weekly a supply of fleas in the corner of an envelope, packed in tissue-paper. She is careful not to put them in the corner where the stamp goes, as the post-office clerk would, with his stamp-marker, at one blow, smash the whole of the stock.

A flea cannot be taken up from its wild state and made to work at once; like a colt or a puppy, it must undergo a course of training and discipline. The training is brought about as follows:—The flea is taken up gently, and a noose of the finest “glass-silk” is passed round his neck, and there tied with a peculiar knot.

•

The flea, unfortunately for himself, has a groove or depression between his neck and his body, which serves as a capital hold-fast for the bit of silk; it can slip neither up nor down, and he cannot push it off with his legs; he is a prisoner, and is thus tied to his work. This delicate operation is generally performed under a magnifying glass; but, after a time, the eye gets so accustomed to the work that the glass is not always used. In no way is the performing flea mutilated; his kangaroo-like springing legs are not cut off, nor are his lobster-like walking legs interfered with,—a flea must be in perfect health to perform well.

The first lesson given to the novice is the same as that given to a child, namely, to walk. To effect this he is fastened to the end of a slip of card-board, which works on a pin as on a pivot; the moment he feels himself free from the hands, or rather forceps, of the harnesser, he gives a tremendous spring forward: what is the consequence? he advances in a circle, and the weight of the card-board keeps him down at the same time. He tries it again with the same result; finally, he finds the progress he makes in no way equal to his exertions; he therefore, like a wise flea, gives it up, and walks round and round with his card-board as quietly as an old blind horse does in a mill. To arrive at this state of training requires about a fortnight; some fleas have more genius for learning than others, but a fortnight is the average time.

There is another mode of training fleas: it is to shut them up in a small glass box, which turns easily between two upright supporters. The flea, when first put in, hops wildly about, but he only hits his head against

the top of the box, and at the same time is supposed to get giddy with the turning round of his prison. I am not aware which system of training has proved the more successful.

Among the trained fleas already at work, I noticed the following: there was a coach with four fleas harnessed to it, who draw it along at a pretty good pace; and I should feel inclined to back the coach in a race against a common garden snail. It is very heavy for the little creatures to drag along, for one pane of glass in a coach is equal to the weight of one hundred fleas. There is a large flea, whose daily task is to drag along a little model of a man-of-war; it is amusing to see him push and struggle to get it along; but get it along he does, although it is two hundred and forty times his own weight. Again, there are two fleas secured, one at each end of a very little bit of gold-coloured paper. They are placed in a reversed position to each other—one looking one way, the other another way. Thus tied, they are placed in a sort of arena on the top of a musical box; at one end of the box sits an orchestra composed of fleas, each tied to its seat, and having the resemblance of some musical instrument tied on to the foremost of their legs. The box is made to play, the exhibitor touches each of the musicians with a bit of stick, and they all begin waving their hands about, as performing an elaborate piece of music. The fleas tied to the gold paper feel the jarring of the box below them, and begin to run round and round as fast as their little legs will carry them. This is called the Flea's Waltz.

Tightly secured in a tiny chair sits a flea facing a

tiny cannon. Several times a-day this unfortunate insect fires this cannon, and in this wise:—One of the little strips which form the feather of a quill-pen is fastened on to one of his legs, and a little detonating powder placed on its tip; the exhibitor then presses the wand down on to the cannon, and scratches the detonating powder; it goes off with a sharp report, making the lookers-on jump, but it astonishes nobody more than the flea himself; he flourishes the burnt remains of his firing wand madly about in the air, his numerous legs kick about violently, his little head bobs up and down, and altogether he shows as many symptoms of alarm as it is possible for a flea to exhibit. The individual flea that we saw in this state of trepidation did not seem to have got used to his work, though the poor thing had been firing his cannon about thirty times a-day for a month.

The fleas are not kept always in harness; every night each flea is taken out of his harness, is fed, and placed in a private compartment in a box for the night; before they go to bed they have their supper, and in the morning also their breakfasts, upon the hand of their owner—sometimes he has nearly all his fleas on the backs of his hands at the same moment, all biting and sucking away. For more than twenty years has he thus daily fed his fleas without any detriment to his health: the quantity of blood each flea takes away being imperceptibly small—one drop of blood, he considers, would feed a flea many weeks; but it is the itching sensation caused by the flea cutting the skin which is unpleasant. This feeling of itching he felt painfully when he first began to submit himself to the

tender mercies of his little performers: now he is so hardened that he feels them not at all, whether biting or sucking. When, however, there are many on his hands at the same time, he suffers from a sensation of great irritation all over his body, which passes away when their supper is over. He has remarked that fleas will not feed if his hand be not kept perfectly motionless; the act, therefore, of feeding and harnessing is troublesome, and he is obliged to devote two hours in the morning and two in the afternoon to it. His fleas generally live a long time, provided they are properly fed and taken care of. He once had a flea, a patriarch, who for eighteen months was occupied in pulling up a little bucket from a well: this flea lived longer than any other flea he ever had, and he believes he died finally from pure old age; for he was found dead one day, faithful to his post, with his bucket drawn half-way up the well.

THE ELEPHANT HORSE.

IN the month of November, 1863, I received the following elegant epistle:—

“Ass I no you like to hear of any thing extra ordinaire in the Annimal Line I inform you that by Wendsday I shall have an African Horse quite *Nacket** with the Exception of the Tail I believe the first One imported in England.”

I could not accept the invitation at the moment, but shortly heard that this “Nacket” horse was being exhibited at Mason’s Riding School, Brompton, under the name of “The Elephant Horse.” The handbill described it “as having being brought from Ceylon by an officer in the Indian army,” &c., &c. When the proprietor brought it out for exhibition, I at once perceived that the curiosity of the “Elephant Horse” consisted in the fact of its body being nearly denuded of hair—probably the result of disease—it was, in fact, our old friend the “Nacket” horse. There was hair upon the legs; but upon the neck, quarters, and part of the head, none

* The writer means “naked.”

whatever—these parts were as bald as the palm of the hand, and presented a black, shining appearance, not unlike the skin of the elephant. The tail is also hairless, with the exception of a little tuft just at the end of it. In these respects only it resembled an elephant—certainly not in stature, for it was a very ordinary-looking creature.

The proprietor had taught the animal to perform various tricks, which are amusing in themselves, and show what kindness and patience can do with a horse.

We have in nearly every class of animals examples of hairless individuals. Thus we have hairless dogs (exhibited some time since as *India-rubber dogs*, and which are, I believe, the kind eaten by John Chinaman), hairless pigs, featherless fowls, and lastly, bald-headed specimens of humanity.

Just one year before the “Elephant Horse” was exhibited, there was exhibited at the Burlington Mews, Regent-street, a wonderful Three-legged Horse. It was simply an ordinary-looking colt (about five months old), in which the hind legs were perfect, but the *left* fore-leg was deficient, as though it had been amputated by a surgeon. Upon close examination I ascertained that, though the entire leg was wanting, its scapula or blade-bone could be felt under the skin, and the joint where the shoulder *ought to be* projects from the skin. When the animal moves forward, this blade-bone is seen moving under the skin, as though the leg was actually present. There is no mark or scar of a wound made by human hand; and I believe the leg has *not* been amputated, but that it has never

THE DUTCH GROOM.

been developed at all, and that the absence of the leg is a natural and congenital deformity. It is remarkable to observe how that nature has compensated the animal for the support of the head and neck—a weight which (by her own showing in the formation of ordinary horses) requires two props, not one; we therefore find that the right leg is powerfully developed, and the muscles about its blade-bone and fore-arm are developed to a most extraordinary degree; they have double work to do, and, like wise things, put on double steam to do it. Again, we must notice the position of this one leg. If we examine it, looking between the hind legs, we shall observe that whatever position the animal assumes this one fore-leg appears to be exactly *underneath the centre* of the chest; this, in fact, is its real position, and we hereby get a good lesson of animal mechanics. The “action” of the animal is something quite new; it may be aptly called “kangaroo” action, or, if you want a more familiar example, “hare” action—the progress made by the creature reminding one exactly of a hare when moving slowly along by the side of a covert. The groom of the horse put his charge through his various paces: “Il marche, et trot, et galop,” said he; but all his paces may be thus described in the words, “hop-stop,” “hop-stop.” The groom is a lively and good-tempered Frenchman, who, in order to be in due keeping with his charge (which was born in Zealand, Netherlands), wears the costume of a Dutch peasant—and a most extraordinary costume it is; his gold and silver buttons are really something wonderful in size and fashion, and might well be adopted by any smart young man who *really* wishes to create a sensation among

THE THREE-LEGGED COW.

his female friends. The groom was as well worth seeing as the Three-legged Horse.

The want of fore-legs was, in the Three-legged Horse, in a great degree, compensated by the increased muscular power and size of the posterior legs and tail, of which it made the same use in the erect sitting posture as a kangaroo.

I expressed a doubt when I wrote the above whether this horse could jump at all, but the matter was set at rest by the proprietor, who wrote as follows:—

“I am very much obliged by your inserting in the ‘Field’ of November 1st, the report of my three-legged horse, made by Mr. Buckland, and perceiving that that gentleman is curious to see whether it could jump without a tumble, I therefore beg to say that it can. It leaped this morning (November 7) clean over a bar, without tumbling, in a small space of not more than 12 feet by 12 feet. Many leaps were made in the presence of several gentlemen.

“W. R. Fox.”

About the same time that I published the above account of this curious horse, I heard that there was a match to it, in the shape of a three-legged cow, which was turned out in a field at a place called West-End, beyond the Swiss Cottage, and near the Cock and Hoop public-house. The cow, like the horse, has one of its fore-legs wanting, and has kangaroo action like the horse.

I regret I had not time to go and see this three-legged cow.

THE TALKING FISH.

IN JUNE, 1859, long before its arrival in London, notices of this creature appeared in every form likely to attract the public eye. I was among the first to pay my compliments to the visitor, exhibited at 191, Piccadilly. How a fish—an animal which has no organs of voice—could “talk,” and how its mal-developed brain could be taught to “learn performing lessons,” was a mystery I was desirous to have explained. It must be recollected that this was the first time the clap-trap phrase—Talking Fish—was coined. The first glance at the living wonder dispelled all my hopes of something new. No scaly, leaden-eyed, cold-blooded fish lay basking in the huge tub which I found placed in the centre of the exhibition-room; but, instead, a beautiful seal, in the finest possible health, raised its intelligent head to my disappointed gaze.

This seal was a fine specimen of its kind, between ten and twelve feet long. Its scientific name is *Phoca leptonyx*, or the small-nailed seal, and is possibly a descendant of the *Phoca* immortalized in Sir Walter Scott’s “Antiquary.”

Jenny, for that was the name of the Talking Fish, had been taught to go through a series of rude performances at the word of command. Closing her hand-like fins to her side, she began to roll herself round and round in the water like a leg of mutton cooking before the fire: this performance was called “roasting the pig.” She then raised herself out of the water, and with

her nose touched her master's right or left hand, being evidently able to distinguish the one from the other. She then folded her flippers across her breast, and looked about in the most absurdly pitiable way. After another series of revolutions in the tub, she raised herself on to its edge, and, stretching out her long wet body a considerable distance forward, placed her cold wet nose against her master's face, by way of showing "how to give a kiss."

So much for the performing; now for the talking. Understanding the orders given, she uttered what I believe to be her natural cry, and which, when the spectator is told means "mamma," or "papa," is certainly very like those infantile words. The papers stated that she could "call John," but she did not get further than "mamma," or "papa," nor indeed is she likely to be made to improve upon her own natural language, which, luckily for the proprietor, may be said to resemble our own as regards these two simple words—a good 'parrot, magpie, or starling, would beat the fish hollow at talking.

The "Talking Fish" was, I believe, a success; principally due to the name under which it was advertised. Numerous "talking fish" have since been exhibited, but proved failures, as the public are now well aware of what a "talking fish" really is. One of these seals distinctly pronounced the words, "beer, beer;"* an ingenious device on the part of the exhibitor to obtain by means of the vocal powers of his "fish" bodily refreshment for *himself*.

* I have notes on some three or four exhibitions of seals⁴ of various species, but must reserve these for another time and place.

MERMAIDS.

WHEN at work doing my best to instruct and amuse the readers of "The Field," I received the following from Mr. William Hall, Boston, Massachusetts:—

"The other day, when I saw the creature of which I send you a sketch, I thought you might be able to tell if it is manufactured, and, if not, its species and name. It is called 'a mermaid,' and it certainly resembles that fabled creature as much as anything else. It was brought from Japan by Mr. Otis Everett, at whose house it still remains. He is in doubt as to its being a manufacture or not. He obtained it from some natives, who assert that it is an extinct species, of which at times a sun-dried specimen is found in the sands of an inland lake. It is of a slate-colour, partly covered with a salty efflorescence; the gullet is stuffed with cloves, and there is no join perceptible in any part of the body; where the scales come to the skin, several scales larger than the others form a sort of chequer, which gradually merge into skin. It has four rows of teeth, besides four upper and four lower teeth in advance of all the others—in all, fifty-two; nostrils very prominent; head covered with short brown hair, but, however, the moths have been at that. I send you a tuft, and two scales from near the tail. The measurements are as follows:—From chin to tail, 13 inches; head, 2 inches; claws, 8 inches; ears, tip to tip, $\frac{3}{4}$ in.; width of fish body, 3 inches; animal, $3\frac{1}{2}$ inches; weight, 1 lb."

There was of course no possible doubt, from the drawing, but that this specimen, described by Mr. Hall, was a manufactured article. I should consider that the head is that of a monkey; the tail that of a hake, or some such fish; the teeth look like those of a common

MERMAIDS.

cat-fish; the claws are those of some small mammal; altogether, it is a most ingenious composition. . .

Mermàids seem to have gone out of fashion about the same time as the dried heads of New Zealanders, but still, I have been enabled to examine minutely *three* specimens of mermaids here in England. They are all the same in structure, and remarkable only for the ingenious way in which they have been put together. The original mermaid exhibited at the Egyptian Hall was bought for 40,000 dollars by two Italian brothers, and there was a long lawsuit about it, as there was ultimately about the "Talking Fish."

There is a very capital mermaid now to be seen in London at the present time. It is at the Oriental warehouse of Messrs. Farmer and Rogers, 179, Regent-street. By the kindness of Mr. Liberty, who took the mermaid out of her case, I have been enabled to examine her minutely. She certainly is a curious-looking thing; though of course to any one with the slightest pretence to knowledge of natural history a decided make-up.

The total length of her marine ladyship is 25 inches, and she is composed in the usual regulation mermaid style, viz., half fish and half quasi human, or, as Horace says—

"Mulier formosa superne
Desinet in piscem."

The lower half of her body is made of the skin and scales of a fish of the carp family, neatly fastened on to a wooden body. The upper part of the mermaid is in the attitude of a sphinx, leaning upon its elbows and forearm. The arms are long and scraggy, and the

fingers attenuated and skeleton-like. The nails are formed of little bits of ivory or bone. The head is about the size of a small orange, and the face has a laughing expression of good nature and roguish simplicity. I cannot say much for the expression of her ladyship's mouth, which is a regular gape, like the clown's mouth at a pantomime: behind her lips we see a double row of teeth, one rank being in advance of the other, like a regiment of Volunteers drawn up in line. The hind teeth are conical, but the front teeth project, as it were, like diminutive tusks. I am nearly as certain as I can be that these are the teeth of a young cat-fish—a hideous fish that one sees hanging up sometimes in the fishmongers' shops in London. Her ears are very pig-like and certainly not elegant, and her nose decidedly snub. The coiffure is submarine, and decidedly *not* Parisian; it would, in fact, be none the worse for a touch of the brush and comb. Mermaids in pictures generally are represented with a hand-glass and comb, as though they paid great attention to the toilet, with the openly avowed purpose, as Tennyson tells us in his "Confessions of a Mermaid," that—

"All the mermen under the sea
Would feel their immortality
Die in their hearts for the love of me."

If I were a merman I should decidedly not fall in love with any mermaid who was not a *great deal* more particular in matters of hair-dressing than our friend under the glass case.

At the back of her head we see a series of knobs, which run down the back till they join with a bristling row

of 24 spines—evidently the spines of the dorsal fin of the carp-like fish. The ribs in our mermaid are exceedingly prominent.

Tennyson gives an admirable description of the mermaids' submarine palace, and also of the social habits of mermaids in general:—

“I would comb my hair till my ringlets would fall

Low adown, low adown,

From under my starry sea-bud crown

Low adown, and around.

And I should look like a fountain of gold

Springing alone,

With a shrill inner sound,

Over the throne

In the midst of the hall.”

To judge, however, from the appearance of our Regent-street specimen, there must have been a rinderpest and famine price of provisions in general down in these splendid submarine regions, for our poor mermaid is very thin, looks half starved and terribly shabby, and altogether has a workhouse look about her.

FEGEE MERMAID.

BARNUM has, I believe, a very good mermaid in his Museum, and he managed, he tells us, in “Barnum’s Life, by Himself,” to cause a great sensation with it, although it really is, as he himself describes it, “a

diminutive specimen of an ugly, dried-up, black-looking animal about three feet long. Its mouth is open, its tail turned over, and its arms thrown up, giving it the appearance of having died in great agony."

The difficulty was to get up the mermaid fever; by dint, however, of having "ten thousand mermaid pamphlets" freely distributed, and several artfully-contrived innuendoes inserted in the local papers, as well as by erecting huge transparencies and ably-executed pictures, representing three mermaids, in the form of very beautiful young women with long flowing hair, and also a boatful of people looking at the mermaid sailing gracefully along the surface of the sea, he managed to create a sensation. . . .

The mermaid painted in the pictures was, of course, the very specimen which could be seen the *other* side of the "Pay here" door of the museum.

Anyhow, Barnum himself confesses in his book to have made during the first four weeks of the exhibition of his Feejee Island mermaid the sum of eight hundred and sixty-eight dollars, or about three hundred and forty-one pounds sterling. Bravo Barnum

THE NONDESCRIPT.

IF Barnum managed to humbug the public so well, and make such a sum of money as above related with his Feejee mermaid, I wonder what he would have done if he had had possession of my Nondescript, of which I now give a representation.

I am sorry to say I can get no history of this Nondescript. I first saw him in the shop of Mr. Wareham, china curiosity-dealer, at the corner of St. Martin's-court, Leicester-square. Mr. Wareham told me he had bought it at a sale from an old gentleman who prized it amazingly, and who in his lifetime valued it at the sum of 100*l*. It certainly is the most extraordinary-looking thing I ever beheld, and, to speak candidly, I am rather offended with the thing, for when my friends come to see my private collection, I am sorry to say their attention is more taken with my hideous Nondescript than by other specimens which I flatter myself are valuable and interesting.

The Nondescript is about as big as a baby three months old, and as a crusty bachelor friend said, "really very much like one."



THE NONDESCRIPT.

He has wings on the top of his shoulder like the old army aigulettes, and there are claws on the tips and on the extreme ends of each wing: these wings are so artfully contrived that one would believe they could be opened out and unfurled like a bat's wing at any moment the creature that carried it wished to take a fly either for business or amusement.

The arms are amazingly human-like, and look as though the dried skin had shrunk fast on to the bone; the legs also represent a similar appearance. The hands and feet are demon-like, and of a long, scraggy, merciless appearance, and each finger and toe is armed with a formidable-looking claw. The ribs project frightfully, as though the nondescript had lately been in reduced circumstances, and had been living for some time *à la mal-content*. The head is about as big as a very large apple. The ears project outwards and downwards, like those of an African elephant. The face is wrinkled and deformed; the nose like a pig's snout; the eyes like those of a cod-fish; the teeth exactly the same as those in the mermaid above described — double rows in each jaw, with protruding fangs in front; and surmounting this hideous countenance, a rough shock of fine wool-like hair, presenting the true prison convict crop, as though the Nondescript had been in trouble and had "the key turned upon him;" and this I should think more than likely, for a more villanous-looking rascal I never beheld; a policeman would be justified in taking him up on suspicion alone.

Before this specimen came into my possession I was unable to examine it closely, as it was considered too valuable to be taken out from under the glass case. The

moment, however, it came into my own possession, I set to work to find out his composition. Everybody said there must be bones in the arms and legs and ribs. I soon tested this with a surgical exploring reedle, but found no bone, or anything like a bone, but simply soft wood, probably cedar. I made several incisions in the Non-descript's body, and found that the main portion of his composition was (like the legs) a light wood. The skin, as well as the wings, are made of a species of papier-mâché, most artfully put on in wrinkles, and admirably coloured and shaded to give the appearance of the dried body of some creature that had once existed either on land or sea—had been slain—and then preserved as a curiosity.

Although I can obtain no real history of my Non-descript, I fancy that he must be the handiwork of some ingenious Japanese. I imagine he is an ancient specimen, and has doubtless seen a great many curious adventures, if he could only tell us his history. He might possibly have been made by the very Japanese fisherman whose acquaintance Dr. Von Siebold, the well-known traveller, made in Japan, and of which he gives us an account in his work "On the Manners and Customs of the Japanese in the Nineteenth Century." Von Siebold says:—

"This fisherman displayed his ingenuity by making money out of his countrymen's passion for whatever is odd and strange. He contrived to unite the upper half of a monkey to the lower half of a fish, so neatly as to defy ordinary inspection. He then gave out that he had caught the creature alive in his net, but that it had died shortly after being taken out of the water; and he derived considerable pecuniary profit from his devil in more ways than one. The exhibition of the sea-monster to Japanese curiosity paid well; but yet more productive was the assertion that the half-human fish had spoken during the few minutes it existed out of its native element, predicting a certain number of years of won-

derful fertility, to be followed by a fatal epidemic, the only remedy against which would be possession of the marine-prophet's likeness. The sale of these pictured mermaids was immense. Either this composite animal, or another, the offspring of the success of the first, was sold to the Dutch factory, and transmitted to Batavia, where it fell into the hands of a shrewd American, who brought it to Europe; and there, in the year 1822-23, exhibited his purchase as a real mermaid at every capital, to the admiration of the ignorant, the perplexity of the learned, and the filling of his own purse."

Thus, then, we have good evidence of a regular manufactory for "Mermaids," "Nondescripts," &c., and all such "Curioses," as my friend Robinson Crusoe would call them. The days of Mermaids are now past, though the time was (judging from old books of natural history) when they were much prized and looked upon as a distinct kind of existing creatures.

There is an old proverb that there is "never smoke without fire," and I believe that the origin of the idea of the existence of mermaids and mermen was the fact of sailors having observed those curious semi-cetaceous creatures, Dugongs and Manatees.

The Indian Dugong (*Halecore Dugang*), is found round about the shores of the Indian Ocean and Ceylon; the Manatee is described by Mr. Wallace as particularly abundant in the lakes of the Amazon: these curious creatures, when diving and playing about in the water, have, I understand, a very human appearance—judging from the skulls, of a man's face with a long nose. Sailors, with their well-known ability of telling yarns to their friends at home, would not have much difficulty in converting a Dugong or Manatee into a real Merman.

A Dugong (*Halecore Australis*), is also found on the coast of Australia, and I learn from an article from the

pen of P. L. Simmonds, Esq., editor of that most useful periodical, the "Technologist,"* that 'Dr. Hobbs, a practitioner of Moreton Bay, and health officer of Brisbane, Queensland, has brought Dugong oil into notice as a substitute for Cod Liver oil. This Dugong is described as equally efficacious as Cod Liver oil in the treatment of consumption, &c., and it has all the therapeutic effects of Cod Liver oil without its nauseous taste and smell. I wonder it has not yet been introduced into England. Thus, then, we practical folks of the present day no longer make a wonder of the Mermen and the Mermaids, but simply harpoon them and boil them down for oil for the benefit of our patients and invalid friends and relations.

* Vol. I., p. 311. Kent & Co., Paternoster-row.

EAGLE MADE OF COPPER.

IN October, 1862, I went to see an exhibition at 191, Piccadilly, of "An eagle made of copper." Before I visited it, I imagined that I was about to see some form of copper eagle such as we see used for "lecturns" or reading-desks in churches—which, by-the-way, are generally about as unlike the real birds as the most ingenious artificer could possibly invent or model.* I was, I may say, delighted and charmed at my first view of this Piccadilly eagle. It is not a "reading-desk eagle" at all, but a most beautiful model of the bird itself, of the natural size, in full plumage and health, thus described by a writer in the "Times": "It stands on the summit of a rugged and precipitous rock, in a bold and threatening attitude. With wings outspread ready for a dash at his quarry, or to withstand a

* I must, however, make one exception to this: it is an eagle carved out of a solid block of oak by my friend the Rev. A. S. Baker, of Hargrave Rectory, Kimbolton. I have a photograph of this beautiful lecturn, which is now in New College Chapel, Oxford.

human foe, the bird, with one claw advanced, firmly grasps with his talons the rocky ledge, while, with head protruding and open beak, he absolutely seems to scream warning and defiance. The keen eye peering from under the shadowing ridge of the skull, the rising feathers of the crest, the swell and ruffling of the muscular neck, form a picture of savage anger as true to nature as it is admirably conceived and executed." After gazing for some time in enthusiastic admiration of this most beautiful work of art, I proceeded, with the kindness of Mr. Phillips, the maker of the eagle, to examine it minutely. Mr. Phillips explained to me that all before me (rock and bird) was made of copper. He set to work some *six* years ago—think of his patience!—in this way: He first made the body of hollow copper, and the bird then resembled a plucked fowl; he then proceeded to put the feathers *on*, instead of taking them *off*—what a difference in the facility with which these operations are performed! He obtained some slips of the finest copper, from Japan (it is only allowed to be sent over from that country in slips), and he began to cover the bird feather by feather; each feather is, indeed, a study by itself, and he showed me the process of making them.

A real feather is placed on the table, a slip of copper is cut out its size and dimensions; it is then hammered into shape, and with peculiar graving tools is *graved* on the surface, and cut at the edges, till it is the *exact model* of the feather itself, each feather having to pass some twenty-six or twenty-seven times under the hammer and the graver, and having frequently to submit to great heat. Some of the feathers—their name is legion

—are huge things, above 18 inches long, such as we see in the bonnets of Scotchmen; the quills of these are hollow, as in the natural state; others are as minute as the down upon a young chicken, or as fine as human hair—witness the feathers about the legs and over the eyes and nostrils of the bird, or, as the “Times” well puts it, “every one of the minute feathers which cluster round the neck, the fine hair-like down which runs from the beak to the eye, the soft cushion of plumage at the junction of the wings and body, are here separate, and can be each separately raised by the finger. The half-hairy, half-feathery legs of the bird are wonderful in the fineness of the down which overspreads them. The most extraordinary triumph of Mr. Phillips’s skill, however, is shown in the extremely minute feathers which cover the frame of the pinions, and which conceal the fastenings of the large feathers forming the tips of the wings. It would be impossible to overrate this portion of the work, so numerous and so thick are the feathers, and so soft and deep is the effect produced.”

I could not make out how it was possible for human hands to put all these feathers on to the copper body of a bird, and this in such beautiful and regular order that Dame Nature herself could hardly surpass the work. Mr. Phillips, however, informed me that every one was *soldered on*, and that he began at the bottom, and soldered the feathers on one over the other.

Still, all this must have been a most laborious task: first of all, to make each feather; secondly, to fasten them on (many of them are so light that a breath of air would blow them off one’s hand); and thirdly, to colour them. Now, unless some colouring process had been adopted,

the copper eagle would have had a dull, and possibly a verdigris appearance. Mr. Phillips has, however, managed to overcome this difficulty. The mode of colouring which he has employed is a secret of his own, and was discovered by him in the course of executing his work. "It is an improvement on the old system, inasmuch as it supersedes the aid of a battery by a new process of what may be termed 'cold electrotyping.' Its chief advantage over the ordinary method consists in the variety of colouring on the same surface which it allows, and its superior economy."

Whatever the process may be, the result is *most beautiful*; there is a glitter and a gloss upon the bird only to be equalled by the plumage of a wild bird who is in the highest condition of health, and upon which the morning sun is pouring down its glorious rays. The plumage is very fine in the daytime; but at night, by the gaslight, which is placed above it, it is still more striking.

I wish I had space to describe the beak, the tongue, the roof of the mouth, the talons—all these are most life-like and true to nature: they are all of copper, as are the feathers. Mr. Phillips has taken for his model—a lesson to thousands of modellers—Nature herself. He has plucked the dead bird, feather by feather; he has studied the *living* bird in its most striking attitude and its most lustrous plumage; and he has produced a work which no naturalist, however sceptical, can find a fault in, and which is perfection itself.

I deeply pity, from the bottom of my heart, the poor "critic" who can write of such a work as this, "that it is good art, no amount of good-nature will enable him

to say." *He* can have no soul above heraldic dragons, mythical unicorns, pug-dogs in old china, conventional "coats of arms," lions, and impossible creatures, the products of the vain imaginations of those who fancy they can beat the glorious designs of all-wise Nature.

This beautiful eagle is, I believe, now, November, 1865, on exhibition at the Polytechnic.

THE MARBLE LADY.

ABOUT five or six years ago an exhibition of a "Marble Lady" was opened at the Egyptian Hall, Piccadilly. The advertisement, in the usual flowing terms, described it as "one of the most marvellous of natural curiosities," &c. "The figure of the lady, the bonnet, parasol, gloves, &c., could be all seen exactly according to nature," &c.

I inspected it immediately, and found the "Marble Lady" carefully covered over with a velvet cloth, and otherwise protected from injury, and I at once saw that it was simply a block of common black marble, about a foot square, in the centre of which there was imbedded a bit of fossil coral-like madrepore of a white colour. The exhibitor pointed out the dress (this antediluvian lady wore no crinoline), the parasol, gloves, bonnet, &c.

This worthy evidently was fully convinced of the reality of his prize, and I could hardly make up my mind to undeceive him. At length I ventured to express my opinion as to its real nature, at which he lost his temper and showed symptoms of unmistakeable anger;

so that I refrained from pressing my theory too far, as it was impossible to convince him of his mistake.

I hear that, in a cave somewhere in Wales, is shown a "Petrified Lady and her Dog." This is, probably, some stalagmite, formed by the water dripping from the roof of the cave. I should much like to know where this "Petrified Lady" can be seen.

"THE GROWING PLATE."

IN February, 1860, the following advertisement appeared in the "Times":—

GO AND SEE MR. HENRY HEALEY'S GROWING PLATE.—The most wonderful natural phenomenon of the age. The surface of an old China dinner plate, which has been in the possession of Mr. H.'s family for nearly 300 years, during which long period it has escaped the accidents of time, is now covered with eruptions of the purest crystal resembling palaces, shrubs, flowers, &c., of the most exquisite beauty. On the 8th of August, 1859, it was removed from the cupboard for ordinary purposes, when it was found to be covered with small eruptions, which created much surprise, and being preserved, has continued to develop its wonderful natural curiosities to the present time. The attention of antiquarians and men of science is expressly invited. Now on view at 147, Oxford-street, opposite New Bond-street. Admission 1s.

I at once paid a visit to this wonderful plate. It was placed on a pedestal, with a glass shade over it, and a railing round it. At first sight, one would imagine that bits of common washing-soda had been scattered over

the plate, and attached to it by gum; but, on closer examination with a magnifying-glass, I observed numerous excrescences of a whitish opaque substance, apparently growing or extending themselves out of the centre and rim of the plate, each supporting upon its surface a portion of the actual enamel of the plate.

The largest eruption (if it may be so called) is about the size and shape of a fourpenny-bit, and it has raised up a portion of enamel above the surface of the plate to about the height represented by the thickness of a new penny-piece. In another place is seen a portion of enamel, also of an oblong shape, just being raised up above its ordinary level by the substance which is coming up from below. Numerous minor eruptions are also seen in the plate, all presenting the same appearance, viz., that of some substance taking its origin from the interspace between the upper and lower surfaces of the plate, each raising with it a portion of enamel corresponding in size to the extruding material.

I have not the least doubt that this is a natural production; that the material is of a mineral parasitic growth, resulting from some chemical decomposition of the clay of which the plate was originally formed. See Appendix.

The proprietor told me that he had refused a cheque for a thousand pounds for his specimen. I therefore advise my readers of "The Field" to look in their china-closets, and see if any of their plates have *grown* since they were deposited there.

THE ANTHROPOGLOSSOS, OR MECHANICAL VOCALIST.

UPON entering the room at St. James's Hall, in company with my friend H. J. B. Hancock, Esq.,^{*} in order to examine this "wonder of the world," as the proprietor calls his mechanical vocalist, a paper was placed in my hands, stating that the Anthropoglossos would sing the following songs:—"The Dark Girl dressed in Blue," "Polly Perkins," "Annie Lyle," "God bless the Prince of Wales," &c. &c. We were informed that "the words of each song would be distinctly articulated, and that, never since the first sound of the human voice emanated from the earliest created of mankind, calling the oral mystery of sounding syllables that float upon the balmy airs of Paradise, until now, has aught been perfected which could approximate, in any degree, to the divinely-bestowed music of speech, and that the automaton head can rival Nature herself in its vocal elocutionary powers."

On entering the room we observed two huge wax heads at each end of a platform, ghastly and lifeless, like the heads of executed criminals; and just behind a railing a gigantic wax head, which is evidently meant to be a portrait of Jullien, but which rather reminded me of the head of the giant Goliath, as seen in the hands of David in picture-galleries. As we entered, the head was singing "Annie Lyle," and the visitors were passing in single file in front of the railing, each stopping for a moment to look at the funnel which came out of the

* August, 1864.

head's mouth and whence the voice was supposed to issue.*

"Uncommonly human, that voice," said I to my friend; "it is *too good*, and the thing has been overdone. There is, moreover, nothing metallic whatever about the voice, and I should not be the least surprised to hear it cough or sneeze; but however, let us take our places."

As we advanced nearer the head, we observed it was supported by two brass chains from above, and was in no way connected with any tube or pipe; but, like Mahomet's coffin, hung suspended in mid-air. The voice was supposed to come from the funnel which projected from the automaton's mouth. Beneath the head, however, was a sort of petticoat or frock, in which was contained the mechanism, which was regularly wound up, music-box fashion, when the song was about to commence.

My friend, myself, and another friend who happened to be present, reasoned thus:—If the voice comes from the funnel, there must be a draught of air; let us try the experiment. We therefore, having no light feather or other substance suited for the purpose, cut off the ends of the silk cord inside our hats, and with a pen-knife spread them out into the finest possible fibres, so that they would show the least puff of air.

My turn arriving, I marched boldly up and placed my "vocometer" (if I may coin a word) into the automaton's funnel; but no—not the least motion or draught of air was perceptible! Then followed my friend with *his* tuft of silk, and another accurate observer brought up the rear, each testing for themselves.

On comparing notes, we found that all three of our

tufts of silk, when placed in the funnel, had been equally *unmoved*, though the head had been singing gaily all the time.

While we were talking, we heard a scuffle behind us, and also the sound as of a blow given. It appears that a gentleman who had come to examine this instrument, had placed his pocket-handkerchief over a piece of perforated zinc which was let into the railing in front of the head, and that the person in charge of the head had taken the law into his own hands and struck out at him, accusing him of trying to turn the head round and injure it.

Both my friends and myself formed our own opinions, which are decidedly not favourable to the metal mechanism of the voice we heard; particularly as, alas! The Anthropoglosses *clipped* his H's.

So much, then, for my experience of Exhibitions! I have recorded, in the above pages, my experiences of the most interesting that have fallen under my notice during the last seven or eight years, though I have notes of many more. I trust my reader will be pleased with what I have written. I must now begin a fresh stock of notes, and shall be only too pleased if any of my readers would help me in my researches, either by giving references to printed accounts, ancient or modern, of curious exhibitions, or telling me where they are actually to be seen.

ANTIQUITIES.

THE BONE-HOUSE AT RIPON CATHEDRAL.

THE principal object of my visit to Ripon Cathedral was to examine the collection of human bones which I had heard were carefully preserved in a crypt under the cathedral. Such collections of human remains should, in my opinion, be always regarded with a proper amount of awe and reverence, considering their sacred nature; but, at the same time, there is no reason why we should not inquire somewhat into their nature and history, particularly (as is the case with the Ripon bones) when the history is somewhat obscure.

Leaving the ancient chapter-house, the civil and intelligent verger, Mr. Benson, conducted us to the crypt, which is underneath the chapter-house. Unlocking the massive door, we at once beheld this wondrous "Golgotha." Bones, bones, bones everywhere; skulls, arm-bones, leg-bones; skulls of old men, young men, men in the prime of life, and of women and children; not, I am pleased to say, huddled together in an unseemly and incongruous mass, but all stacked and arranged

with decency and order. The visitor cannot, in fact, see the walls of the crypt, for against them is piled a wall of bones about 6 feet high, and 4 feet in thickness. Considerable taste (if I may use the expression) has been exhibited in the arrangement of the bones. In former times they were all scattered in confusion about the vault, but the old sexton of the parish, Mr. Dennis Wilson (himself now resting in the quiet churchyard), much to his credit, undertook, in 1843, the task of arranging them. He has done this by placing a row of skulls on the floor; then a thick row of arms and leg-bones with the round ends protruding; then another layer of skulls, and so on, till the space from the floor to the roof of the crypt was entirely occupied. I counted these skulls in their several compartments, and found that there were thirteen skulls in a row, from the wall to the outside of the stack, and twelve in a row lengthways.

I remarked great variety in the conformation of the various skulls. Some were long and narrow, others broad and massive; some were bullet-headed, some were delicately shaped and classical; some presented the orbits of the eyes open and well marked; in others they were peeping and diminutive. In some the teeth were good, in others bad. Few of the bones or skulls presented any signs of decay, the vault being excessively dry. Then, again, the pillars of the crypt were ornamented with festoons of skulls. The arches from the pillars to the walls sustained rows of skulls; in fact, wherever there was a space vacant, there a skull could be found. One of the skulls, in particular, I noticed presented a highly-polished surface on the bone of the

forehead. I am at a loss to account for this, except by the fact that it happens to be just in the place easiest reached by the hand of the visitor, and the touch of the fingers of many visitors for years past has given it this peculiar appearance. I am the more convinced of this because an enormously long *femur*, or thigh-bone, measuring no less than $21\frac{1}{2}$ inches, is kept separate from the rest, and placed in the hands of the visitors by the verger for examination. This *femur* carries a bright polish, like a looking-glass. The thigh-bone of my friend, M. Joseph Brice, the French giant (whom I have described in these pages), was $22\frac{1}{2}$ inches in length, so that we may, therefore, fairly conclude that the man of whose body this Ripon bone formed a part approximated to the same height as M. Brice, namely, 7 feet 2 or 3 inches. I also among the arm and leg bones observed several cases of fracture, and subsequent reparation, showing that surgery in some part of Ripon's ancient history was not at its maximum of perfection.

I was curious to arrive (if it could possibly be done) at the number of persons represented by the bones in this crypt. Each person must of necessity have had a skull, so that, by counting the skulls, I conceived I might get at an approach to the number of people whose remains were deposited in this crypt. We accordingly counted the skulls in their length, breadth, and thickness; measured the compartments, length of the crypt, &c., and, by a calculation, made out that there were the skulls of 9,912 in the bone-stacks in this crypt. Not all their bones were, of course, there, as there would not have been room for them. All the bones, save and except the skulls and the arm and leg bones, the verger

had buried in the churchyard at the time he stacked them. "But you must go on with your calculations, sir," said the vergier. "Why so?" I asked. "Because," said he, "underneath the floor of the crypt is another mass of bones, buried under the ground on which you now tread; they also are stacked, and are 4 feet in thickness, and are spread all over the vault of the crypt." What a vast assemblage of the mortal remains of human beings are, therefore, collected together! I leave it for the reader to calculate the sum.

I was naturally most anxious to obtain correct information as to how and when these bones were collected in the place where they are now deposited, and was most fortunate in getting the most reliable information from Mr. Harrison, of Ripon, whose authority on all archæological matters in the neighbourhood is undoubted. He tells me that these bones were discovered in a confused mass, thrown into a vacant space between two buttresses of the cathedral; that they were removed from thence into the crypt, where they remained unheeded and unregarded till the sexton undertook to arrange them. Now, how came they between the buttresses? In former times the various villages and hamlets in the neighbourhood of Ripon had no burying-grounds attached to their parochial chapels, but it was the custom of the inhabitants to send their dead for interment in the precincts of the cathedral. Since the ground became replete with human remains, and the grave-diggers, when making a new grave, had to remove large numbers of human bones, these bones were placed between the buttresses, and there accumulated for centuries;

some of the bones are, therefore, possibly as old as Wilfrid, Archbishop of York, to whom, about the year 661 (Wilfrid died 671), Aldfrid, King of Northumbria, gave the monastery of Ripon, previously founded by Eadā, Abbot of Melrose.

ANCESTRAL SKULLS.

THERE is another curious collection of human skulls and bones in England, besides that at Ripon, which are well worthy of a visit.

I heard of these quite by accident. When staying a few days at Folkestone, I thought I would pay a visit to Hythe, and look at the musketry practice. I never, however, got a look at the shooting, as something much more to my taste attracted my attention.

On my journey to Hythe from Folkestone, according to my usual custom, I inquired of the omnibus-driver whether there was "anything curious" to be seen at the place we were going to.

"Why, yes, sir, I've heard say that there is a wonderful sight of Christians' bones in the church crypt; some of the regular old-fashioned sort of bones, sir, all stacked in a row like fire-wood for burning at Christmas time."

The moment the omnibus pulled up at the White Hart, I hunted up the parish clerk, who confirmed the driver's story, and obligingly walked up to the church (Saint Leonard), with his bunch of big keys in his hand.

The crypt is situated at the east end of the church, but is not below the level of the earth. When the guide opened the ponderous oak doors I saw an immense stack of human bones, piled up in regular order, and evidently with the care always due to the sacred remains of our fellow-creatures. The walls of the pile are formed by the rounded ends of arm and leg bones, while every here and there a skull is built into the stack; and these emblems of mortality grin a ghastly grin at the astonished visitor, before his eyes are quite accustomed to the sudden change from the bright sunlight outside.*

The history of these bones is very remarkable. They are said to be all that is now left of an army of our forefathers, the good old Anglo-Britons, and of a horde of savage, barbarous, invading Danes; the bones of deadly foes now lie mixed together, and those that 1016 years ago were opposed in deadly strife, have yielded alike to the all-conquering arm of death, and silently repose, gradually crumbling into the dust from whence they were taken. There is a framed placard upon the wall of the crypt, which, in the following words, tells us the particulars relative to this curious collection:—

“In the reign of Ethelwolf, A.D. 843, the Danes landed in Kent, near to Hytha (Hythe); they proceeded as far as Canterbury, a great part of which they burnt. At length Gustavus, then governor of Kent, raised a considerable force to oppose their progress, and after an engagement, in which the Danes were defeated, he

* This article was published in “Leisure Hour,” No. 410, November 3, 1859. In this number will be found an excellent drawing of this curious crypt, with the bones in it.

pursued them to their shipping on the sea-coast, where they made an obstinate resistance. The Britons, however, were victorious; the slaughter was prodigious, not less than 30,000 (?) being left dead on the field. After the battle the Britons, wearied with fatigue, and perhaps shocked with the slaughter, returned to their homes, leaving the slain on the field of battle, where, being exposed to different changes of the weather, the flesh rotted from the bones, which were afterwards collected and piled in heaps by the inhabitants, who, in time, removed them to the vaults of one of the churches at Hytha (now Hythe). This is supposed to be the only genuine description, and is extracted from a very ancient history of Great Britain."

Mr. Tournay, builder, and clerk of the church, informed me that the bones used to lie scattered in disorder till about twenty years ago, when they were arranged in the present decent order.

This great battle of Hythe was fought on the sea-shore, which just here is very level, and for this purpose has been chosen for rifle practice. There is a considerable range of hills about half a mile from the sea, and a better locality for a battle-field I never saw. A short time ago a sham battle between the regiments stationed at Shorncliff camp took place, under the inspection of H.R.H. the Duke of Cambridge, near the very spot where the bones were found, and served to realize to the present inhabitants of Hythe the ancient strife between their forefathers and the Danes. The house of the present mayor of Hythe is built upon part of this battle-field, and in digging the foundation of the house many bones were discovered, whence the name now

given to this house, which is more expressive than classical, viz., "Marrow-bone Hall."

On each side of the door of the crypt are arranged on shelves rows of skulls, about 250 on each side. (In the great heap there must be the remains of at least 2,000 individuals.) The skulls on the shelves were loose, and could easily be examined; they are said to be the skulls of Ancient Britons and of Danes, and the distinction between them is marked. The skulls of the Britons are those of persons who in life must have been noble-looking fellows. They are much rounded, high at the top, broad at the forehead, presenting a cavity that must have contained a large and intellectual brain. The brows are large and well-formed, the cheek-bones massive, and the jaws powerful, but by no means brutish. One of these heads is placed on the table, and is much polished by the handling of visitors. It must have belonged to a chieftain; as courage, stern determination, and firmness, are all prominent in its form. A finer specimen of a well-developed human skull we never beheld; and the visitor need but examine the shelves to find many others equally well developed.

The Danish heads are of quite a different shape: they are long and narrow; the face must have been small, and, if I mistake not, the eyes in life diminutive, and rather sunk into the head; the jaws project downwards and forwards, as we see in many savages of the present day. Upon one of these skulls I found some short hair still remaining, which, when examined with a glass, I found to be of a red fox-like colour, and undoubtedly Danish, for even now the Danes are, I understand, as a rule, a red-haired race.

The teeth remaining in the skulls are in excellent order ; and I observed but very few symptoms of disease about them, so that tooth-ache could not have been common in those days—a very different state of things from what we find among soldiers of the present day. The teeth of the Ancient Britons were worn away, from the summit downwards, like the teeth of aged herbivorous animals. I have observed this trait very commonly in the skulls of these ancient people, and imagine it to proceed from the fact that their food was principally hard peas, beans, etc., which wore the teeth down like mill-stones.

The skulls were mostly those of adults: even in those days they had for the most part only able-bodied men for soldiers: only one skull of an old man did I find, though, alas! three skulls of boys, about twelve years of age. Two of these were British and two Danish. Might not these be the skulls of the drummer-boys of the camp? If they had not drums in those days they might have had something analogous to drums; or these boys might have acted as assistants to carry the men's spears, weapons, or provisions.

The fighting in those days must have been regular hand-to-hand, downright fighting, for upon many of the skulls we found wounds, particularly about the forehead and sides of the head. In a medico-legal point of view I could assert that these wounds had been inflicted by some heavy, but not over-sharp weapon, such as these warriors of ancient days were likely to have used. Some of these weapons were found with the bones, but I was not fortunate enough to obtain a view of them. One of the skulls presented a depressed hole in the forehead,

which might have been made with a round stone from a sling ; for the sling was used in those times, before the invention of guns and cannon, and a very formidable weapon it was in ancient warfare, as we may learn from several passages in sacred writ.

The arm, leg, and other bones were those of persons in full health of body at the time of death. Only one bone did we find that at all approached to a diseased state, and that was the tibia or shin-bone of a bandy-legged person. Perhaps his bandy legs did not allow him to run away fast enough, and so he got killed in the general *mêlée*.

Most of these bones were in excellent preservation, and they must have formed the frames of exceedingly muscular and powerful persons, for the points where the muscles were inserted are very prominent and roughened, which is always the case in those who lead a life of severe bodily labour. There must have been some very tall men who fell in this memorable battle, for one of the thigh-bones which we measured must have supported a frame nearly 7 feet high. These giant bones are rare compared to numerous shorter bones ; but still we may fancy that the former inhabitants of this island, judging from their bones, must have been taller and more athletic than the majority of its inhabitants at the present day.

There is a notice in the crypt, "Please do not write upon the skulls ;" but I do not consider this a sufficient intimation why I should not write *about* the skulls, for the benefit of those who take interest in matters relating to the history of the ancient inhabitants of this island.

Craniologists would, possibly, have a different story

from the above to tell, as regards the nationality of these skulls. I tell the story as it was told to me, and describe simply what I saw. I shall be only too glad to know the opinion of other scientific men, relative to the skulls, both at Hythe and at Ripon.

ALDERSHOT SKULL.

WHEN doing duty as medical officer in charge of the 2nd Life Guards in Aldershot Camp, in June, 1861, our Quartermaster, Corporal-Major Waite, who, knowing my love for curious things, was (and even is now) always kindly on the look out for anything interesting, was good enough to bring me a copy of the "Aldershot Gazette," in which I read the following:—

"REMARKABLE DISCOVERY AT ALDERSHOT.—On Monday morning some workmen who were removing earth near the Royal Horse Artillery barracks, South Camp, Aldershot, discovered the skull of a person who had evidently met with a violent death many years ago. The skull, which appeared to be that of a full-grown man, was pierced at the top with a gunshot wound, and there was a slug wound in one of the eyes, with the slug remaining in it. A part of the jawbone seemed to have rotted away, and a surgeon gave it as his opinion that the skull had been in the ground twelve or fourteen years at least. The present site of the camp was a wild heath a few years ago, and the neighbourhood is associated with many tales of the exploits of highwaymen. No other remnants of a human being, except the skull,

were found by the workmen, and that has been placed in the hands of the police, who are instituting inquiries respecting it."

I immediately got on my horse and rodé away up to the South Camp, where I found the good folks in a considerable state about the matter, and this made me more anxious than ever to see and examine the skull. At last, by the kindness of a brother medical Officer, I was enabled to examine the skull, and make inquiries about it.

It appeared that some of the men of the Horse Artillery, when hunting for rats at the back of the stable, turned up this skull; they could not imagine how it got there. The fact was, therefore, reported to the police, and, according to the "Aldershot Gazette," "was taken by them to the Coroner." There was a hole on the top of the skull, which was made by the sergeant himself with the point of a pitchfork; there was also the mark of a cut or wound in the bone over the right eye—this wound had healed over, and must have been inflicted some years before death, and there was a small leaden shot, such as would be fired from a revolver, still fixed in the bone of the outer wall of the orbit of the left eye. From the appearance of this leaden shot it was probable that the shot was fired from behind.

At first everybody said there had been a murder committed at some time or another; and following the hint thrown out by the "Aldershot Gazette," the prevailing idea was, that some unfortunate traveller had been shot by a highwayman upon Aldershot heath in the good old days when highwaymen abounded on this abominable desert heath—I call it abominable because

soldiering and perpetual field-days in this bleak wilderness is not at all suited to *my* taste. Anyhow there was a considerable "talkce, talkce" about the skull—Dick Turpin—highwaymen, &c. There was, however, an awkward little fact that nobody could account for, viz., where was the rest of the poor murdered man's body. Only the skull was found; what could the highwayman have done with the body of his victim? Nobody could explain that, yet here was the fact of the skull staring one in the face. At length (and I was really in one way very sorry for it, for it stopped all the speculations, the inquiries of the sagacious police, the Coroner's inquest, &c., &c.) the mystery was exploded in the most prosaic manner possible.

It turned out that a sergeant of the Chesnut troop of Royal Horse Artillery had this skull given him by the servant of Captain ———, *who brought it from the Crimea*. The sergeant's wife—not liking its being in such close quarters with her domestic arrangements—did not approve of the skull being in her husband's hut while in camp, so, in order to put it out of the way, the sergeant buried it about one foot deep in the ground in the rear of the stables, in order to be out of the way of his better half. He intended, I believe, when the time came for the troop to move from the camp into town quarters, to have dug up the skull and taken it with him. However, fate decreed it otherwise.

If the sergeant had not very properly and creditably come forward to explain how this skull came to the place where it was found, it is probable that much more would have been said and done about it than *was* said and done.

I was very anxious to obtain this skull, which had caused so much discussion in the camp, and the brother medical Officer above-mentioned was good enough to give it to me; the sergeant, having had more bother with it than was agreeable (first with his wife, and then with the stir and fuss made about its discovery), was pleased enough to get rid of it.

This skull is now on the shelves in my museum at Albany-street; but I am sorry to say I have lost the bullet out of it.

As soon as I had the opportunity, after obtaining it, I took it to the Royal College of Surgeons, and compared it with the skulls in the ethnological section of this magnificent collection. It appears to me, and to other medical friends who were with me, that this cranium found at Aldershot must be (as, indeed, it is reported to be) that of a Russian. The peculiar round shape of the head, formation of the cheek-bones and forehead, as well as other points, lead us to this conclusion. It is, moreover, a smaller head than the generality of the European type; this may or may not be an individual peculiarity; anyhow, all the Russian helmets I have seen seem to have been made for people with small heads.

Although this wonderful skull turned out after all to be the skull of a Russian brought from the Crimea, the matter set us all talking about highwaymen, &c.; and in course of conversation, an Officer, quartered at the camp at the time, told me of a discovery of human remains which it is not at all improbable were really those of some unfortunate murdered traveller. During some excavations in front of the south cavalry barracks

at the camp,¹ the workmen came upon a mass of lime three or four feet beneath the surface; in this lime were mixed the remains of a human being. The outline of the body was apparent, as well as a portion of the skull, ethmoid, and metacarpal bones; all the rest was converted into a wax-like substance, which is called adepocere. The next day the bones of a horse were discovered only a few yards away from the spot where the human remains had been buried. The horse's bones were in good preservation, and no lime had been placed on them. The spot where these skeletons were found was situated outside the hedge of what had formerly been a lone cottage, not far from the high road; no record of any kind was found with them, nor are there any local traditions as to how this man and horse came to be buried in this out-of-the-way place. May it not be fairly imagined that some foul deed had taken place here in former times—some poor lost traveller entrapped into the house and murdered? his horse shot, and both buried—the man without a coffin, in lime, in order to get rid of the body quickly, the horse without lime, as its bones would not cause such suspicion if discovered.

Upon inquiry I learned that there are several "stories of highwaymen's deeds" on Aldershot and Bagshot heaths still recollected by local inhabitants. There is a small wayside public-house at the village of Hale, between Aldershot camp and the town of Farnham, which is pointed out as the site of the escape of Dick Turpin through the back windows. The landlord of the 'Cricket's Arms,' near Bagshot, told me that the lone public-house on the top of Bagshot Hill was

formerly called the 'Golden Farmer' (it is now the 'Jolly Farmer'), and was presided over by a highwayman, or else a fellow in league with the highwaymen. Just beyond the 'Golden Farmer' is a lane called to this day Gibbet Lane, as a man formerly hung in chains at the point where it joins the road. An ancient postboy died at Staines not many months ago, who remembered affrays with highwaymen, and who bore the marks on his crippled foot of a bullet shot at him by one of these worthies, whose genus are now, thank goodness, extinct.

'I recollect my mother telling me that, when she was a little girl, on her annual visit to London with her father, travelling in a post-chaise from Abingdon to London, she used to wear a bolinet whose lining was well stuffed with bank-notes for fear of the highwaymen. It has been recommended by an authority, that when modern travellers are journeying in suspicious, out-of-the-way places on the Continent, &c., they should sew up sovereigns in the buttons of their coats, and so carry them without suspicion. But, say I, this plan won't do, for where would the traveller be *if somebody should walk off with his coat?*'*

* Mr. Galton in his "Art of Travel," under the heading "Secreting Jewels," says, "Before going among a rich, but semi-civilized people, travellers sometimes buy a few small jewels, and shut them up into a little silver tube with rounded edges; then, making a gash in their skin, they bury it there, allowing the flesh to heal over it. They feel no inconvenience from its presence, any more than a once-wounded man does from a bullet lodged in his person, or from a plate of silver set beneath the scalp. The best place for burying it is on the left arm, at the spot chosen for vaccination. By this means, should a traveller be robbed of everything, he could still fall back on his jewels. I fear, however, that if his precious depôt were suspected, any robbers into whose hands he might fall would fairly mince him to pieces in search of further treasures."

Close observations of the peculiarities of human skeletons and skulls will often lead to important results. The following is a case in point, and I have the more pleasure in recording it as it is a good example of the acumen of my late dear father in such matters, and a fine bit of medical jurisprudence on the part of his old friend Mr. Clift, then curator of the Hunterian Museum at the Royal College of Surgeons, and the father of Professor Owen's amiable and agreeable wife. The incident happened when I was three years old, so I know nothing about the details of the case. I give it from a printed paragraph I found among the Dean's notes. The story is as follows:—

“In January, 1829, a quantity of human bones were found near the race-course at Doncaster. These bones were supposed to be the remains of Mr. Wood, who disappeared some years before, and was never heard of again. An inquest was held at the time the discovery was made, which was adjourned to allow of time for making inquiries. The adjourned inquest was subsequently held, the bones having been previously sent to Professor Buckland at Oxford, with a request that he would give his opinion as to the length of time they might have been buried, and as to whether they were the bones of a male or female. The answer was singularly interesting. The Professor, not being willing to rely entirely on his own judgment, sent them to Mr. Clift, curator at the College of Surgeons, who said, that in consequence of the pelvis being wanting, he could not say whether they were the bones of a man or woman. He observed, that from a slight distortion of the vertebræ of the neck, the person, when living,

must have held his head on one side. He further remarked, that the canine teeth of the lower jaw must have projected considerably. These two gentlemen also agreed that the bones might possibly have been interred ten years ; but it was far more probable that only six or seven years had elapsed since that event. These circumstances, taken together, confirm the belief that the bones are the remains of Mr. Wood, who did carry his head a little on one side—his teeth projected in the manner described—and he has been missing about seven years. How or by what means his death was occasioned is not yet ascertained.”—*Sheffield Courant*.

Relative to the discovery of skulls, my friend Mr. Bush tells me a capital story. When in practice as a medical man at Witney, in Oxfordshire, he one day, as he was going his morning's round, met the coroner on his road to hold an inquest. The coroner told him that the head and bones of a child had been found at — village, and that a woman was suspected of having committed a murder and concealed the body of her infant. A sudden thought struck Mr. Bush that he would like to accompany the coroner and attend the inquest, and fortunate it was for the poor woman he did so. Arriving at the cottage, the head and bones were brought out with due form and solemnity, while a crowd of gaping villagers stood chattering at the door. At the first sight of the bones, Mr. Bush said, “ Well, it's all clear about these bones, anyhow ; they are rabbit's bones ; there's the leg-bones, and there's the bladebones. They are no human bones ; but as for the child's head, I don't know what to say about that.” An old woman then volunteered as evidence that Mr. — had been

there and examined it, and given it as his opinion that it was a child's head or *summot*.* The shape of it was amazingly like an infant's head; but yet the smell was very familiar to Mr. Bush, only he could not call to mind at the moment what the substance really was. "Here," says he, "lend me a knife." So they brought a knife, and Mr. Bush cut the child's head right in half. The knife went through it easily enough, and when the two halves fell apart, the child's head turned out to be—what do you think?—why, soap! Nothing but a great lump of common yellow soap. The Coroner stared at the villagers, and was thankful he had not officially sworn in the jury. The village sensation "caved in," as the Yaukees say, but the poor woman's character was saved. A good example how easily a person's good name may be injured.

It appears that "the child's head, or summut," had been found in a little flue, above a fireplace, in a cottage once occupied by an old woman. This old woman, being a good housekeeper, had been in the habit of keeping her bars of yellow soap on a ledge up the chimney; and one day she, by accident, had pushed a bar of soap down the flue. It had in time become melted, and had, by some strange, curious coincidence, assumed the form of a child's head, and thus caused all the fuss that was made about it.

My father, in his lectures, used to tell us a story, that in the neighbourhood of Oxford some men who were digging down some earth found what they reported to be a giant's bones, or at least the bones of a man who must have been considerably over the ordinary stature.

* Oxfordshire for "something."

The discovery made a sensation at the time ; and to quiet the agitation and the scandal raised thereby, a coroner's inquest was held in due form over the skeleton, ending in a verdict, honestly arrived at by twelve true and lawful Berkshire men. Upon subsequent examination by competent authorities, the mysterious skeleton was pronounced, most decidedly, to be that of an old Roman, who had been buried, with all his arms and military accoutrements, near the camp to which he had probably belonged, and of which the remains are still to be seen on the two hills called the Dorchester Clumps. Little did his noble companions in arms think when they buried their chieftain, with all due solemnity, that some hundred years afterwards his bones would be dug up again, and "sat upon by a crowner's jury" in an English public-house.

Among the cave bones in the Dean's Museum at the Ashmolean at Oxford were the bones which formed part of the skeleton of a woman. This female skeleton was found extended in the usual position of burial, in a cave in Glamorganshire. The bones were remarkable for being stained with a dark-red brick-coloured substance, known as ruddle. Close to that part of the thigh-bone where the pocket is usually worn, were found several small sea-shore shells in a state of complete decay ; and, mixed with these, numerous fragments of small ivory rods, and small ivory rings ; together with a rude instrument (resembling a short skewer) made of the metacarpal bone of a wolf, flattened to an edge at one end, and terminated at the other by the natural rounded condyle.

The charcoal and fragments of recent bone (ap-

parently the remains of human food) render it probable that the cave in which they were found was at some time or other inhabited by human beings; and the circumstance of an ancient British camp existing on the hill above it strengthens the supposition. The ivory rods and rings are certainly made from the tusks that lay in the same cave, and were probably used to fasten together the coarse garments of the ancient British soldiers, or to serve as armlets for the dandies. The shells might have been kept in the lady's pocket, or have been used, as they are even at this day, in Glamorganshire, for a simple species of game. The wolf's toe was probably reduced to its present form by the hands of this ancient dame, and used by her as a shawl pin or skewer. The custom of burying with their possessors the ornaments and chief utensils of the deceased, is well known to have existed among the ancients—ancient Britons included.

Several theories were started to account for the peculiar red colour of the bones. Among others it was suggested that this old woman was in the habit of selling ruddle to the British soldiers in the camp close by; and that, whilst still pursuing her avocation, she died a peaceful death in her cave; there being no wood to make her a coffin, her considerate neighbours had placed her in her own ruddle sack, and thus buried her.

In lapse of time the sack and the flesh decayed; but not the bones, which had absorbed the ruddle, and thus assumed the peculiar red colour.

A fuller account of these bones is given by the Dean in his "*Reliquiæ Diluvianæ*," but I here give the outline of the story.

One day, after the Dean had exhibited these very bones to his class at his lectures, and mentioned the ruddle theory as regards their colour, the late Philip Duncan, Esq., of New College, handed him up the following lines, putting the whole story into poetry:—

“Have ye heard of the woman so long underground;
 Have ye heard of the woman that Buckland has found,
 With her bones of empyreal hue?
 Oh, fair ones of modern days, hang down your heads!
 The antediluvians rouged when dead,
 Only granted in lifetime to you.”

The tale goes, that the Dean, when lionizing a distinguished foreigner over his museum, showed him these red bones, and gave him Mr. Duncan's verses to read. The Frenchman shrugged his shoulders when he read the fifth line, and exclaimed, “Mais c'est extraordinaire, voilà la coquette encorè.”

RELICS OF OLD LONDON.

In September, 1863, I was requested by Mr. Wareham, dealer in curiosities, corner of St. Martin's-lane, Leicester-square, to examine some human bones which had been discovered in digging a foundation in St. Mary Axe, City. They consisted, I found, of a thigh-bone, two leg-bones, and a lower jaw. The leg-bones were discovered actually *en situ* in the ring of an ancient pair of irons or fetters, such as we see

placed on criminals in pictures of Jack Sheppard. The irons, of course, were much corroded with rust. The bones are those of a person who must have been a dwarf, and the thigh-bone had been fractured some time previous to death. The lower jaw is of a large size, but still it is possible that all the bones belonged to the same skeleton, as dwarfs often have large heads. How this poor prisoner became buried where the skeleton was found may, I think, be explained as follows:—

Shortly after the above was published in "The Field," my friend, H. J. B. Hancock, Esq., sent the following communication to the columns of that journal:—

"Having been requested by Mr. Buckland to examine the bones recently discovered at St. Mary Axe, and mentioned by him in No. 558 of 'The Field,' I did so, and found that the victim had been bow-legged, and, from the size of the jaw-bone, probably hydrocephalic and an idiot. On looking into histories of ancient London, I find that at or near to the place where these bones were discovered, there existed, in 1568, a burial-ground of the space of one acre, given by Sir Thomas Rowe, the then Lord Mayor, for the use of such parishes as might be without graveyards, and also for old Bethlehem (Bedlam) Hospital. It does not seem unlikely, then, that the bones in question belonged to an inmate of Old Bedlam, who, with the carelessness usually exhibited towards lunatics in those days, was buried without any one taking the trouble to knock off his gyves, which are still riveted.

"HENRY J. B. HANCOCK."

These bones are in my collection, and underneath them

I have placed an old engraving of the Old Bethlehem Hospital, which I bought for one penny at an old book-stall; the date of the actual view is 1670; it was torn, I understood, from a work (I know not the title) by Overton, published in 1721. The poor man who was buried in his fetters might have been confined in this very hospital.

DISCOVERY OF THE REMAINS OF JOHN HUNTER IN
THE VAULTS OF ST. MARTIN-IN-THE-FIELDS.

IN the month of January, 1859, when sitting in the mess-room of the 2nd Life Guards, at Windsor, carelessly looking over the advertisement sheet of the "Times," the following caught my attention:—

"ST. MARTIN-IN-THE-FIELDS—CHURCH VAULTS AND CATACOMBS—ORDER IN COUNCIL—NOTICE. Any person or persons having the remains of relatives or friends deposited in any of the vaults under the Church, or in any of the catacombs under the churchyard, situate at the north-east corner of Trafalgar-square, are hereby informed that they may, if they so desire, remove the same before the 1st day of February, 1859; after which date, all coffins remaining in the said vaults or catacombs will be re-interred in the same place, and finally built and closed up in accordance with the said Order in Council, and cannot afterwards be inspected on any pretence whatever.

"BENJAMIN LATCHFORD, } Churchwardens of the said
CHARLES H. PETTER, } Parish.

"All communications to be made in writing, addressed to us at the Vestry House, Adelaide-place, W.C."

Why, surely John Hunter* is buried in this church, was the thought that immediately struck my mind:

* The reader may possibly not know who John Hunter was. The following, published with portrait of Hunter, in "Leisure Hour," No. 385, May 12th, 1865, is my feeble attempt to give some idea of his character:

The generation among whom John Hunter lived and worked has now almost passed away, and the question is not unfrequently asked, "Who was John Hunter, and what did he do?"

Health, to all of us, is *the* greatest blessing that can be enjoyed in this life; and, during the inroads of disease, medical assistance is most valued. As individuals, we never appreciate a public benefactor so much, as when in person we receive direct benefit from his labours and discoveries. Without slighting the labours of other great surgeons and anatomists, it may be confidently affirmed that there is not a man, woman, or child among us who, when struck by the sting of disease, and receiving relief from the art of medicine, does not directly or indirectly receive relief to his suffering from the discoveries of John Hunter.

It seems to be an ordinance of Providence to raise up every now and then great minds among the human race, to whom it is granted to lift the veil of obscurity which envelops the great laws which regulate this universe, and to penetrate further than is granted to ordinary mortals into the mysterious workings of the Creator. John Hunter was one of these great "high priests of Nature;" the gifted explorer and interpreter of the laws of animal life, as affected by health and by sickness; the great master who had the ability and the will, not only to record his discoveries, but to forge from them weapons of defence, wherewith those who follow him might wage fierce combat with that dread destroyer of mankind, the Dragon disease.

from the Council of the Leeds School of Medicine, with the following resolution :—

“ 30, Park-place, Leeds,
“ August 29, 1863.
“ Sir,
“ At a meeting of the Council of the Leeds School of Medicine, held a few days ago, I had the pleasure to move the following resolution, which was carried unanimously :—

“ That a Silver Medal be presented to Francis T. Buckland, Esq., as a mark of respect, from the Council of the Leeds School of Medicine, for his exertions in placing the remains of the late John Hunter in Westminster Abbey.”

“ In accordance with that resolution, I have the gratification of sending you the medal enclosed, the receipt of which you will please to acknowledge at your leisure.”

“ I remain, Sir,

“ Your obedient servant,

“ SAMUEL SMITH.”

The medal is exceedingly handsome. On one side it bears a remarkably fine portrait of John Hunter, by Wyon, and on the other the words—“ Francisco T. Buckland. In memoriam eximie pietatis erga reliquias vivi illustrissimi Johannis Hunter. Schola Medicinæ Leodiensis; D.D. A.D. 1831 inst.”

In December, 1864, I received thirteen volumes of handsomely-bound books, with the following letter :—

“ Royal College of Surgeons of England,

“ London,

“ 19th day of December, 1864.

“ DEAR SIR,

“ I have the pleasure of forwarding to you with this letter a copy of the catalogues of its Museum, presented to you by the Council of this College.

“ In the first page of these volumes is inserted the

resolution of the Council presenting these catalogues to you; and I take this opportunity of forwarding a copy of the resolution of the Council of the 10th of March, 1859, viz.:—

“ ‘Resolved—

“ ‘That the thanks of this Council be given to Mr. Buckland for his active and efficient services in identifying the body of John Hunter.’

“ I am happy in being the medium of transmitting to you the gift of the Council.

“ Believe me,

“ Very faithfully yours,

“ J. HODGSON,

“ President.

“ To Frank Buckland, Esq.,

“ Albany-street, Regent’s-park.”

To this letter from our President I replied as follows:—

“ 37, Albany-street, Regent’s-park.

“ To the President and Council of the Royal College of Surgeons.

“ MR. PRESIDENT AND GENTLEMEN,

“ Allow me to express to you the extreme gratification I feel for the high honour you have done me in presenting me with a copy of the catalogues of your Museum, together with a formal vote of thanks of the Council passed March 10, 1859.

“ It would be needless, in this place, to refer to the reasons why the Council have conferred on me the double honour; suffice it to say, that in rescuing the mortal remains of our great and illustrious founder, John Hunter, from the vaults of the church of St. Martin-in-the-Fields, Charing Cross, on the 2nd of February, 1859, and afterwards having the satisfaction of witnessing those remains deposited amid the mortal remains of a glorious band of the most distinguished worthies that have

adorned our country, amongst the monuments of kings and queens, poets and historians, philosophers and divines, statesmen and warriors in Westminster Abbey,* I feel that a high privilege has fallen to my lot.

"The name of John Hunter, venerated not solely within these walls, but by the medical profession in all parts of the civilised world, has thus—after his mortal remains have been mouldering in the dust these sixty-six long years—again shone forth, an encouraging and propitious omen to his professional children; and by the life-like statue which has recently been erected in his Museum, our founder once more seems to live and move among us, and to preside over his Museum which so many of the gentlemen I have now the honour to address have amplified and enlarged to the benefit of science and the good of suffering humanity.

"From my earliest childhood I was brought up by my late respected father, the Dean of Westminster, to regard the memory of John Hunter with a respect approaching almost to veneration. I rejoice, therefore, that this early tutelage first suggested and then encouraged me in carrying out the services which I have been enabled to render to the remains of one whose example and memory must ever be dear to the sons of Esculapius; and when we see that these services are practically and formally acknowledged by the Council of the Royal College of Surgeons, it is a culminating point in the life of him who has performed them which can fall to the lot of but few.

"Gentlemen, once more, both individually and collectively, I tender you my most sincere and heartfelt thanks.

"FRANK BUCKLAND.

"Feb. 8, 1865."

This then is the history of the last honours paid by the present generation to the illustrious John Hunter.

* See Sermon by Dr. Buckland "On the reopening of Westminster Abbey."

THE SKULL OF BEN JONSON.

It will have probably been observed in the "Times" report of the reinterment of John Hunter (see a few pages back) a statement that "the skull of Ben Jonson was freely handed about."

Again, in the "Times" of November 11, of this year, 1865, the following paragraph appeared:—

"THE SKULL OF BEN JONSON.—In the course of a paper read this week by Dr. Kelburne King, president of the Hull Literary and Philosophical Society, before the members of that Society, on 'The Recent Visit of the British Association to Birmingham,' the Doctor, in speaking of a visit which he and Dr. Richardson, of London, had made to Shakespeare's birthplace, at Stratford-on-Avon, narrated the following curious incident:—He said that a blind gentleman, who thought no one but the guide was present, mentioned that a friend of his had a relic which would be a valuable addition to the Shakespearean Museum at that place,—the skull of Ben Jonson. This friend had attended the funeral of Dr. —, at Westminster Abbey, when he

perceived that the next grave, that of Ben Jonson, had been opened, and he could see the skeleton of the body, in the coffin. He could not resist the opportunity of putting in his hand and extracting the skull, which he placed under his cloak and thus carried it off. From a remark which the blind gentleman dropped, Dr. Richardson thought he could identify the offender, and he asked if the person's initials did not consist of certain letters. The blind gentleman, who was not a little startled at finding that his secret was out, admitted the fact, but prayed that no advantage might be taken of the discovery. This was promised; but, as Dr. Richardson is an ardent admirer of the Avonian bard, he is determined that, without going to extremities, he will bring the necessary pressure to bear on the possessor of the skull, so that it shall be placed in a more worthy repository than the cabinet of an obscure individual."—*Times*, November 11, 1865.

I think it, therefore, my duty to the public in this place to record what I know of this matter.

In the year 1849, Sir Robert Wilson, Knight, was interred in the Abbey, and the place chosen for the grave was close to a triangular stone, let into the pavement in the north aisle, on which these words were inscribed:—

O RARE BEN JONSON.

My father, who was then Dean, told me that Ben Jonson* had, at his own request, been buried, *not* in the

* "Jonson, Benjamin, was born at Westminster, in the year 1574, and educated at Westminster School; while he was there his mother married a second husband, by trade a bricklayer, and when Jonson became of sufficient age to be employed, he worked at his father-in-law's

usual position, but that the coffin had been placed upright in the earth, with the feet downwards.

I have forgotten the story the Dean then told me, but I have since been down to the Abbey, and find from "Mentor," who has acted as guardian of Dean's-yard for very many years, that the local tradition is, that Ben Jonson asked the king (King Charles the First) to grant him a favour.

"What is it?" said the king.

"Give me," said Ben Jonson, "eighteen inches square of ground."

"Certainly," said the king; "but where will you have it?"

"In Westminster Abbey," replied Ben Jonson.

"Your request is granted," said the king.

Ben Jonson knew that if he had asked direct for what he wanted he would probably have been refused; he therefore adopted the above ingenious plan of obtaining a favourable answer.

The above is (as I have said before) the local tradi-

business. Some gentleman who saw him working with his father took compassion on him, and he was sent by Camden to Sir Walter Raleigh. In the year 1598, his fame rose by the production of the comedy of 'Every Man in his Humour,' at the Globe Theatre, and from this time he adopted the practice of writing a play every year. He appears to have suffered much from poverty in the latter part of his life. He died on the 6th August, 1637, and was buried three days afterwards in Westminster Abbey." He was the friend and cotemporary of Shakespeare, "who, in 1598, had been admitted to an intimacy with Ben Jonson. That Shakespeare was loved as well as admired by many of his cotemporaries is well authenticated. Ben Jonson, a warm-hearted man, as well as a sterling writer, declared, I do love the man and honour his memory, on this side of idolatry, as much as any: he was indeed honest, and of an open and free nature."

tion. I should feel much obliged if any reader of this could tell me if it is recorded in any book; I myself, have searched in vain.

When, therefore, Sir Robert Wilson was buried close to the triangular stone which marked the grave of Jonson, my father instructed me to go into the Abbey and look after the grave-diggers, in order to ascertain what I could about the above-mentioned tradition.

After a time, the men, in working, found a coffin very much decayed, which, from the appearance of the remains, must have originally been placed in the upright position. The skull found among these remains, which Spice the grave-digger gave me as that of Ben Jonson, I took at once into the Dean's study. We examined it together, and then going into the Abbey, carefully returned it to the earth; retaining, however, a few fragments of the coffin wood.

John Hunter's grave, I observed, was to be dug somewhere near the spot where we had deposited the skull years before, so I gave minute instructions to the grave-digger (the same man, Spice, that had found it before), that if he should by chance turn up Ben Jonson's skull again from the earth, he should take great care of it and give it into my charge. In the course of his work he *did* find this skull again, and when I went down early in the morning of the day of the reinterment of John Hunter, to examine the grave, the old man told me he had found Ben Jonson's skull, and gave it me, and I knew the skull again quite well.

A thought came across me, thus:—To-morrow there will be a crowd of folks here, and it is more than likely that, seeing the inscription on Ben Jonson's triangular

head-stone, they will look out for, and possibly carry off, the poor man's skull, if they can find it; so I at once dug a hole in the earth from the grave, which was piled up under the ledge of the monument of Colonel James Bringfield* close by, and hid Ben Jonson's skull safely away.

When the ceremony of the reinterment of John Hunter was completed, I went out with the rest of the people; but as soon as the Abbey was clear and the men began to fill up the grave, I went back again by a private door, and with my own hands placed Ben Jonson's skull on the top of John Hunter's coffin, and waited till the grave was nearly filled up, and there could be no possibility of removing the skull.

A few days since, Nov. 28, 1865, in consequence of the statement in the "Times," as above quoted, the Dean of Westminster, Dr. Stanley, sent for me to inquire if I knew anything of Ben Jonson's skull. I called upon him at once, and we went into the Abbey to look at the localities, after I had stated to him the facts as above recorded. Wishing to confirm my story, I inquired for Spice the grave-digger, but found that he had been dead some time. Mentor, who old Westminsters well know has had the charge of keeping Dean's-yard for many years past, told me that one Ovens was still alive, and that Ovens assisted Spice to dig the graves for both Sir R. Wilson and John Hunter.

* "Col. James Bringfield, equerry to Prince George of Denmark, aide-de-camp and gentleman of the horse to the great Duke of Marlborough. He was a native of Abingdon, in Berkshire, and was shot by a cannon-ball at the battle of Ramillies, on Whit Sunday, 12th May, 1706, whilst remounting the Duke on a fresh horse, 'his former fayling him.' He was interred at Bavechem, in Brabant."

We therefore went down to see Ovens, whom I found so old that he could tell me nothing at all; in fact, the poor old man's memory was nearly gone. I then asked for Mr. Ryde, who was clerk of the works in my father's time; and having ascertained that he had retired into private life, at once called upon him. And now I have another story to tell about this matter. Mr. Ryde informed me candidly, and at once, that he was quite certain that *I* had never had the right skull at all, but that *he* took charge of it.

When Sir Robert Wilson was buried, in 1849, he (Ryde), in his official capacity, superintended Spice and the other grave-digger in their operations. The earth in which the grave was made was loose sand, which he expected had been carted into the Abbey, as it was above the natural soil of the place. As the grave was being dug, this loose sand "rippled in like a quicksand;" and in the course of the operations, Ryde himself saw the two leg-bones of Jonson, fixed bolt upright in the sand, as though the body had been buried in the upright position, and the skull came rolling down among the sand, from a position above the leg-bones, to the bottom of the newly-made grave. Ryde picked up the skull and carried it to the clerk of the works' office, in the cloisters, where he locked it up till the newly-made grave was nearly filled up; he then brought it back again into the Abbey, and buried it about twelve or fifteen inches under the triangular stone on which the words "O Rare Ben Jonson" are inscribed. He remarked that there was hair still on the skull, and it was of a red colour.

In 1859, when the grave was made for John Hunter,

Ryde was still clerk of the works, and John Hunter was to be buried close by the side of the grave of Sir Robert Wilson. It was likely that Ben Jonson's skull would again be found. Ryde therefore kept a look out for, and found the skull under the triangular stone where he had placed it. The skull had still traces of red hair upon it. Again, for the second time, he took charge of it, and when Hunter's funeral was over, he again buried it some twelve or eighteen inches under the triangular stone, and here it is to be found at this moment, never, I trust, to be again disturbed. Three or four skulls, Ryde told me, were found in digging Hunter's grave, but they were at some distance to the west from Rare Ben Jonson's stone. These skulls he replaced again in the graves; but both he and Spice remarked that one was missing.

This, then, was the skull now in the possession of the blind gentleman's friend, as mentioned in the "Times" of Nov. 11. It must have been taken out of the Abbey at the time of Hunter's funeral.

Anyhow, it is quite positive and certain that the skull in question is *not* that of "O Rare Ben Jonson;" for two persons distinctly state that they took charge of it, and returned it to the earth, viz., first, Mr. Ryde, the clerk of the works, and, secondly, myself.

I candidly confess that, in my opinion, the skull that the clerk of the works took under his charge on both occasions, as above stated, was the real skull of Ben Jonson, and this on account of the red hair which he observed on the skull. Thanks to our excellent library at the Athenæum Club, I have been enabled to get curious particulars relative to the personal appear-

ance of Ben Jonson. In a volume, entitled "Letters written by Eminent Persons, in the Seventeenth and Eighteenth Centuries, and Lives of Eminent Men. By John Aubrey, Esq. The whole now just published from the originals in the Bodleian Library and Ashmolean Museum. Longman, 1813"—I find evidence quite sufficient for any medical man to come to the conclusion that Ben Jonson's hair was in all probability of a red colour, though the fact is not stated in so many words.

Let us now therefore sum up the evidence.

The skull Ryde found had red hair upon it; it was probably therefore that of Ben Jonson's.

It was found twice under the triangular stone on which the words O Rare Ben Jonson were inscribed.

It was twice removed thence, and protected against the chance of removal.

It was, on the 28th of March 1859, buried eighteen inches below this triangular stone. It has not been in any way disturbed since.

I think therefore the public may rest assured that the skull of Ben Jonson rests still beneath his grave-stone in Westminster Abbey.

As regards the stone on which the words O Rare Ben Jonson are inscribed, I would beg to inform the reader that there are *two* stones which bear the inscription: one a triangular stone on the floor of the church, the other a square stone let into the wall a few yards to the north of the grave, underneath Colonel James Bringfield's monument. As regards this latter (the older) stone, Pyde told me that he found this very stone in the stone-yard of the clerk of the works' office, in the

cloisters, and reported it to my father, who immediately examined it, and ordered a place to be cut for it in the position where it can now be seen. Ryde and my father together fitted the stone into the place which it now occupies; the Dean at the time remarking to Ryde that the name was spelt wrong, and not the correct way, "Jonson." It was necessary, however, to chip the edges a bit to make it fit it. There is, however, no doubt whatever that this was the original stone which had been over the grave of Ben Jonson, the triangular stone being that which was put down when the floor of the Abbey was repaved, at the latter part of Dean Ireland's time.

There is a tradition connected with this original stone, and it is that Ben Jonson's friends intended to place a fine monument in the Abbey to his memory; this however was never done, and there would have been no record at all of the place of his interment, had not a friend of the poet's given a small fee to a mason that he found at work at another monument, soon after his funeral, to cut the single words we now read.

I have made it my business to find out the origin of this tradition, and am glad to have arrived at the facts of the case. Aubrey records as follows.

"Mr. Benjamin Jonson, Poet Laureat (I have heard my uncle Danvers say, who knew him), used to live without Temple Bar, at a combe maker's shop about the Elephant and Castle. In his later time he lived in Westminster, in the house under which you passe as you goe out of the church yard into the old Palace, where he dyed. He lies buried in the North aisle in the path of Square stone (the rest is lozenge) opposite

to the scutcheon of Robertus de Ros, with this inscription only on him in a pavement stone, blew marble, about 14 inches square—

O RARE BEN JONSON.

W^{ch} was donne at the chardge of Jack Young (afterwards knighted), who walking there when the grave was covering gave the fellow eighteen pence to cut it."

A P P E N D I X

VOLUMES I. AND II.

4 APPENDIX.

VOL. I. PAGE 5.

BATHING LITTLE CHILDREN IN THE SEA.

WE have seen how by kindness Robinson Crusoe managed to train up a kitten to take to the water. It is a pity we do not apply the same practice to bathing little children, and I here beg to quote an article I wrote on the subject in the "Queen," the Ladies' newspaper, August, 1862.

I venture to write a line in favour of little children, and the proper mode of bathing them. I do this because I have just been witness to an unquestionable, but I believe unintentioned, bit of cruelty towards a dear little infant about two years old. I happened to be rowing past the bathing-machines, on my way to the fishing-ground with Robinson Crusoe, at "the Spit" buoy, near Southsea Castle, when I heard terrible screams from a bathing-machine, which was advanced into the water. I stopped the boat, and went nearer to see what was the matter. I then saw a lady (not one of the hideous old hags of bathing-women, who are enough, *even ashore*, to frighten a timid child into fits) standing in the water with a naked helpless baby in her arms; the poor little thing was screaming in an agony of

fright, but, nevertheless, the lady took the child round the body, plunged it, screaming as it was, into the sea (which was not over-smooth), and then lifting it out danced it about for a second or two, then ducked it in again, and in again over head and ears, and pretty deep in the water. The screams of the poor child became fainter and fainter, and at last it was quite still; and why so? the water had got into its poor little eyes and mouth, and the sudden shock of the cold water, the effort of screaming, and the fright of the waves had quite prostrated it and rendered it totally exhausted. The lady then at last began to pet it. Now if I had wanted to *drown* the child I should have done just what this lady did to her baby; she dipped it head foremost, at least six or seven times, deep down into the sea. She gave it no breathing-time, no time for reaction of the skin. She showed no mercy to the fear of the tender infant; and should the little thing have been naturally subject to fits, she would most certainly have brought on sudden congestion of the brain, and possibly, nay, very probably, death.

Now, good ladies, pray do not be cruel to your little infants; make some allowance for their tender fears and their tender little lives; don't trust them to the mercies of the bathing-woman, nurse, or other careless person; *give them time* when about to bathe, encourage them, talk to them, laugh with them; wet their heads gently first, and let them crawl down of their own accord into the water (they will do it fast enough in time, never fear); they will be thus pleased, not alarmed, at the water, and in a short time become regular "water-dogs."

How would you like M. Brice, the giant, to stalk up suddenly to your bathing-machine, tear you away from all support, and half drown you in the rolling wave? You would not like it at all. Well, recollect the bathing-women, *are* giants to the poor little children; so have pity on their infantile fears. Besides which, the timid child (whom you would not shut, at home, in a cupboard) is taken into a bathing-machine—a rumbling, musty, damp cupboard—the doors are closed, iron chains rattle horribly, the broad wheels grind along the loose stones, and the child finds itself descending slowly, but surely, into the sea, which soon comes lashing its, to them, fierce waves on to the steps; the poor child (who probably fears the cold water in its nursery tub in its quiet home) is expected to plunge, or rather be plunged, into what, to it, is probably a fierce storm of tumultuous waves. The motion of the machine alone is terrible enough, how much more so must be the prospect of impending and forcible immersion at the end of the journey! Consider all this, good Ladies, and have some common-sense regard for the poor children—give them time, don't hurry them, don't duck them cruelly. There is a bathing-master at Gosport (Mr. Thui) who teaches ladies and children to swim in an amazing short time. His teaching is all on the “don't hurry” system. A young lady comes to learn to swim, she is afraid of the water, and will only just wet her feet; “Very well,” says the master, “that's very good for the first time; that is quite enough for to-day;” to-morrow the young lady takes courage, of *her own accord* goes deeper into the water, and in a short time, having never been frightened or alarmed, acquires so much confidence

that she is enabled to take her swimming lesson without fear, and with full confidence in her own powers. " This principle should be applied to children ; they will thereby acquire pluck, and never fear the water. Mr. Thui's little daughters, I hear, can swim before they can walk, but he never hurries them.

I cannot finish this without another word : little children should have bathing-dresses on ; the lady I saw " trying to drown the child," as my friend and myself called it, was standing in about four-feet water deep, and the tide was running pretty fast. If she had let it slip, in its struggles it would have been out of her reach, and at the bottom in a moment ; nor could she have easily recovered it, human skin when wet being very slippery and difficult to hold : with a bathing-dress there is something to catch at, if a child perchance gets away from the arms of the attendant.

I venture to make these remarks because I am convinced that many Ladies unwittingly inflict much pain upon the children by forcing them suddenly *under* water. It is not necessary for health that the head should be wetted more than once, or at most twice ; and water can be easily poured on the head before entering the water. All I wish to urge is, that children when bathing should be trusted to very careful and intelligent persons, and never be hurried by violent, or anything approaching to rough, usage on the part of the person who has charge of them.

VOL. I. PAGE 16.

SLEEP OF FISH.

I BEG here to quote a few of the curious and interesting facts which appeared in "The Field," about 1865, relative to the sleep of fish.

"It is natural to suppose that all fish sleep, but necessarily with their eyes open; we cannot, however, call this sort of repose a suspension of mental powers, as they have none. I have seen trout perfectly tranquil at the bottom of a river resting upon the gravel, and in this state have known them to be snared, and not easily roused until touched. Eels are very sluggish, and appear drowsy in the mud during the daytime, but at night are active enough. Fish do not regulate their hours of sleep like the higher animals, but take their rest at intervals, according to the state of their stomachs, though they sometimes play, and are evidently early risers.—(*A Good Observer*) *Roscrea*."

"This question is one of no little interest. Theory perhaps would say they do, but some fishes much more than others. Sleep is a condition of the nervous system of a reparative nature. All animals sleep—all animals, at least, that have a brain or rudimentary brain; but in the curious amphioxus, or lancelet, there is no brain. In the lampreys, again, the cephalic masses are only a little more developed. These creatures, probably, do

not sleep in our acceptation of the term, for they have little or no brain to furnish thoughts; but in the higher fishes the brain is such that sleep is highly probable among them, though it may be difficult to see them asleep. The amphioxus, it may be said, is the lowest of all fishes. In reptiles such as frogs the brain is like that of the higher fishes, and a poor frog looks very bewildered if you place him under chloroform; he sleeps then soundly. In the head of a large majority of fishes we find four pairs of nervous masses; the first for smell, very remarkable in sharks; the second is analogous to our organ of sleep, small in perch, salmon, etc., but in the shark large (they are probably the corpora striata, which in man with certain grey matter of the mesocephalon form the special *sensorium*); the third nervous mass, larger than the others, are for the optic nerve, or faculty of seeing, very large also in insects; and fourthly, the cerebellum, which is probably not, as previously held, for regulating the movements of fishes, but regulating involuntary actions, such as that of the single heart of fishes, and not unconnected with sleep. All fishes that show ingenuity, such as salmon in going up salmon-ladders, have brains that require sleep; but the lamprey, probably, does not sleep so much as lie dormant and rest. The poet tells us to

Learn of the little nautilus to sail,
Spread the thin oar, and catch the driving gale—

which shows mental ingenuity. But no doubt some of your various piscatorial readers have seen fish sleep, and one fact is worth a bushel of theory.—*Charles Kidd, M.D. (Sackville street, W.)*"

"This question has often occurred to me, and I have never received any satisfactory answer. The basking of fish is nowhere more noticeable than in the clear Hampshire streams. When boys at Winchester used to watch the great trout lying motionless in mid stream for hours together, and if we sometimes snared them with a wire at the end of a ground-ash stick, I think the adroitness of the feat, and the indistinctness of schoolboy notions upon poaching, ought to be admitted as 'extenuating circumstances.' You will remember too, sir, that in those days we had no 'Field' to teach us better. The trout certainly seemed asleep, and they had not one eye only open, like the *nunquam dormio* of your contemporary, but both eyes. They must, however, have kept their fins and tail in constant motion, in order to retain their position in the stream. Similarly, birds are able to preserve their balance on tree-tops when asleep. Am I right in supposing that fish have no moveable orbits, or even nictitating membrane to the eye? If so this must be the difficulty of taking fish with the fly on bright days, as the glare of the sun, and even of white clouds, must dazzle them in no slight degree.—*J. Hooker.*"

"I have for many years kept small fish in a circular aquarium, holding about ten gallons of water, and containing valisneria and anacharis, and have derived much gratification from watching their movements and habits. The sorts I found to succeed best, and therefore those with which I am most acquainted, are carp, tench, minnows, and gold fish. Of these, all but the gold fish appear to sleep at uncertain intervals, not apparently influenced much by day or night, but by atmospheric

changes. Some of them used to lie on the bottom, but most preferred to suspend themselves in the thick growth of anacharis, where they would remain for many hours without moving a fin, and if a light were held close to the globe would take no notice of it, although at other times a light would always attract them. The gold fish, on the contrary, appeared to be always in motion, and wide awake; night or day, dark or light, they were wandering about like unquiet spirits.—*M. M.*"

In salmon rivers it is quite usual, when the season is dry, to observe a pool week after week occupied by the same squad of these lively fish, generally a rocky-bottomed pool, in which netting is not practicable. The dry summer of 1859 afforded an excellent chance for watching the proceedings of a batch of about thirty salmon and grilse, which occupied such a pool, well situated for observation, during several weeks; one of these, a large fish marked with a scar on its back, became a special object of attention. This fish never moved from its perch on the edge of one identical rock, to which it might have been supposed to be riveted, neither stirring fin nor tail. No material change was perceptible in the positions of any of these fish during the many days their motions were carefully watched by daily visitors.—*J. C. S.*"

"As I have had the opportunity of studying the habits of many of the smaller marine fishes in my aquaria, I offer what evidence I have on the subject of their sleeping. The fifteen-spined stickleback (*Gasterosteus spinacia*), as well as the grey mullets, appear to be hardly ever at rest, wandering ever up and down the

tank. The gobies rest sometimes all day, and in the evening come out in a troop and play about. The blennies are always hiding, but usually come out and welcome me as soon as I come to the aquarium, returning like a flash of lightning to their favourite rock, with the tiny morsel of meat I generally give them. The beautiful ribband-like *Muraenoides guttata* is very shy, and is only beginning to know me; while the dragonets and bull-heads are confident, and appear to fear nothing. But the decided sleepers are the various species of wrasse: they, after playing up and down for an hour or so, picking up their dinner of infusoria, quietly retire to their corner, and, lying down on their sides, go (I think) comfortably off to sleep. Each of my wrasses (and I have, I think, nearly a dozen in one of my aquaria) has had one bed-place, where he is always to be found. If he is not playing about I know where to look for each one of them. Many of my fish are so tame that they let me take them out of the water in my hand. If Mr. Buckland would like to see the aquaria, I shall be very glad, on receiving a day or two's notice, to show them to him.—*F. Z. S.*

VOL. I. PAGE 85.

EFFECT OF SHOT ON FISH.

I HERE beg to quote from "The Field" some of the correspondence relative to this curious subject, first started by the events at Aldermaston Park.

"Among the fishermen in the bay here (Mount's Bay, Cornwall), I find a wide-spread belief that fish disappear

(probably go to the bottom and remain quiet) at the sound of big guns; and now in these days of Volunteer artillery, it will be well that the fishermen should be disabused of such a notion if there is nothing in it, or protected in earning their livelihood if there is foundation for it. I have certainly seen a shoal of porpoises, blowing freely, disappear on the report of a cannon, without reappearing afterwards, and I have been credibly told (indeed the fact is mentioned as authentic by several writers on fish) that shoals of pilehards invariably go to the bottom during thunderstorms. A fisherman of the bay here recently told me that he has more than once changed from good sport to no sport at all, on the commencement of artillery practice on the bay. One thing is certain, that the increase of artillery practice, and the decrease in the quantity of fish on the inshore here, are going on contemporaneously—whether this is a mere coincidence, or cause and effect, I want to know. No doubt trawlers are responsible for much of the mischief—are they for the whole?—*M. B. (Prussia Cove).*”

“In the very amusing paper by Mr. F. T. Buckland, ‘A Shot at the Wild Ducks,’ he says, ‘The fish, then, must have been stunned by the concussion of the water more than by the actual blow of the shot.’ This brings to my mind a circumstance which I have often related, that some few years ago, when woodcock shooting in Cornwall, the spaniels drove a water-hen into the mill-leap near to where I was standing on its bank. I saw the bird with outstretched neck making its way up the bed of the stream, which was about two feet deep. I fired almost vertically, which brought him to the surface

amidst the bubble of water, floating on his back. Thinking I had riddled the bird, I at once pocketed him, as dead, of course. I shot down the valley half a mile further or so, when, meeting with Mr. S., who had shot upwards, we agreed to cast anchor on Trecanne Green to lunch. Before we had compared notes as to our relative sport, guess my surprise at my friend exclaiming, 'There goes a water-hen from under you!' and, sure enough, there he was, making off across the Green, as fast as his cramped legs and bewildered head could carry him, having escaped from my inner pocket while sitting on a rock. Not a shot was found in the bird's body; and I came to the conclusion that the concussion of the water must have stunned him, which Mr. Buckland's thoughtful experiment on the jack proves. —S. S. S."

"Some of those who are interested in this subject may not know that the following method of taking fish, chiefly pike, is practised in Norway. I heard of it from my brother, who spent several winters there, and can answer for the truth of the statement. As soon as the shallow waters are firmly frozen, men go out to look for fish through the ice: when they see one lying on the bottom, they strike a hard blow on the ice over the head of the fish with a large wooden hammer. The fish are killed in this way, provided the ice is thick and the water shallow. So seldom do they recover, that the men often leave them for days before cutting a hole in the ice to take them out.—C. W."

"I can confirm the remark of Mr. Buckland's pike not being hit by the shot, but only stunned by the concussion, as I and some of my brother-officers have shot

fish in the marshes of the Cataragin River, Kingston, Canada, while out snipe-shooting. Our practice was, when arriving at any of the innumerable little creeks in those marshes, too deep to wade, too wide to jump, to look carefully out for the track of a disturbed fish, and fire at it without seeing the fish itself; and frequently the result was, the fish turned up apparently dead, but if it was not secured it would soon recover. I never saw any shot-marks on these fish. I have shot carp in a pond in Belgium, and unless the fin was on the water, without penetration. I made some experiments, years ago, on the penetration of shot in water, by sinking a pine-board at different depths, but I have lost the results. I intend trying them again on my return to England, and if of any service to your readers, shall be happy to communicate them to you.—*M. V.*”

“I was struck with Mr. Buckland’s remark on the ‘duck-shooting’ night, respecting the pike which was stunned with the shot. Really nothing escapes his observation, which seems as keen as his scalpel. It may interest him to hear that we have a way of killing fish in Sweden, under the ice, much upon the same principle—as soon as ever the lake is covered in the autumn, so that the ice on the sides will bear us, we go round, over all the shallows, armed with an axe. The fish here, especially the pike and perch, always come up into the rushes at the sides of the lakes at the end of autumn, and it is then that we leister them at night. I fear Mr. Buckland will deem me an incorrigible poacher, and fancy that after we had wound up the fair season, by leistering at night, we might at least let the poor fish have a little peace under the ice. But

when we are at Rome, etc. Well, we go cautiously over the ice (four to six inches thick), on all the shallows, and we can see anything at the bottom. The fish appear to lie close up to the ice (I suppose for the sake of air), and directly we see one we walk cautiously over him, and give the ice a thundering blow with the back of the axe, just over the fish's head. This turns it up at once, and then, as quick as we can, we chop a hole through the ice, and lug out the fish; we have to be pretty handy though, for the fish, which is only stunned, soon gets second wind. This we call to 'döfna' fish: it is capital fun, and many a good pike and turbot do we get in this way. The season for this kind of poaching does not, however, last long, and I never see any one try it except just for a week after the ice will first bear, for I fancy then the fish all go back to the deeps. Considering all the poaching devices which are in use here, I wonder how we have any fish left at all.—*An Old Bushman.*"

"Perhaps I may be able to elucidate the phenomenon which has lately been discussed, respecting the fact that fish are stunned when a violent blow is struck on the ice or water above them. A human being would equally be stunned, on account of the great sound-conducting power of water. Being at one time of my life much given to diving, I made a series of experiments on sound, with a view of ascertaining whether fishes, under the water, could hear a sound on shore. I got some forty men and lads to stand by the river-side, and when I was seen at the bottom of the river, to give a unanimous shout—this was repeatedly done, but I never heard the least sound. I then directed a blow to be struck on the

water with a stick, and was as nearly stunned as a fish might be, though my head was at least eight feet from the surface; indeed, I thought at first that some one had played me a trick—dived after me—and hit me on the head. The conducting power of water is really wonderful, for the stroke of an oar at a mile's distance seems just over head, and a heavy footstep on the bank communicates a perceptible and startling jar to the ears. It is a very good thing for fishes that the auditory organs are so imperfect, for, if they were as sensitive as ours, the denser medium in which they live would communicate vibrations of such intensity that the brain would not be able to perform its functions rightly.—*J. G. Wood.*"

"As some of your correspondents have been discussing this question, will you permit me to impart what little I know on the subject? One afternoon in July, 1833, when residing at Rotherway near Hereford, the late Mr. John Matthews, who was fishing down the Wye, called upon me, and during our chat the butler came in to tell me that the carp were showing themselves on the surface of the long pond. I took a 32-bore rifle, and we hastened to the water, where I fired three or four shots, aiming, as I had always been advised to do, considerably under the fish, but none turned up. I must here mention that, before I shot, Mr. Matthews conjured me that wherever I hit the fish not to injure the delicate morsel in the nape of the neck. I then handed the rifle to him, and he observed to me, 'Since you fired low, I will aim direct at the fish.' He soon got a shot, and a carp between three and four pounds floated on the water quite dead; we

threw a fly line over him and got him out, when my companion found to his disgust that the bullet had cut the *bonne bouche* clean out of his neck; however, he did not object to put him in the creel he was carrying. In the year 1836 I fired at a trout with the same rifle from the top of a bridge at Hampton Court, Herefordshire. The fish floated down the river, and when I got him out I found the bullet had fairly decapitated him. During the afternoon of the same day I fired at another in the very same place; this fish sank, and when I got him out I found him uninjured, with the exception of a streak down his side. Along this the scales were knocked off, but the skin was unbroken. Why should the one fish have floated while the other sank? I recollect, also, once firing at a last-spring from a bridge in the Vale of Neath. This fish also sank, and showed no mark at all. I presumed the mere shock of the bullet caused his death.—*Higford Burr.*”

“I once met a man fishing in a small stream that ran past his door, who told me that in the summer, when the water was low and the trout took refuge under the big stones, that he and his neighbours were in the habit of striking the uncovered tops of said big stones, when the trout beneath them would almost immediately come ‘belly up’ to the surface.—*Voyageur.*”

“When at St. John’s, Newfoundland, I was much interested in the matter of submarine blasting which was being carried on at the entrance to the harbour at a depth of from eighteen feet to twenty-four feet. I observed that quite a number of fish, chiefly of the herring tribe, were killed by the explosion of the

charges of powder, which, I believe, were on an average of seventy pounds. The fish floated to the surface quite dead, but not mutilated. In my opinion the fish were attracted by the brightness of the tin cases which contained the powder.—*C. (Halifax, Nova Scotia.)*"

"Mr. Buſkland notices the possibility of fish being stunned by the concussion of a shot with the water. In India the natives constantly kill fish in this way. About all large tanks there is generally a superannuated shikari with an equally superannuated matchlock, who perches himself on hot afternoons, like a kingfisher, on some branch overhanging a deep sunny corner, where the big fish are lazily floating near the surface. Presently a circle of little bubbles on the water shows where a gigantic 'sork' or 'rhoe' is nearing the upper air. Our kingfisher blows his match, and as the outline of the monster gets distinct, bang! he fires at his head. Sometimes the bullet hits the fish and kills it, but oftener it sinks stunned to the bottom, in which case the sportsman slips off the tree and plunges in after it, lugs it out, and despatches it with his axe before it has recovered its senses. I have passed many a lazy evening shooting these big fish when disinclined for other sport. You can read your book quietly till a fish comes up, an occurrence which your hungry attendant will certainly never fail to bring to your notice. Shells are the best things to use for this sport, if sport it can be called. On a cold day the fish will not rise nearer the surface than within a foot or two, and owing to the refraction it is difficult to kill them with a common ball. A shell, however, always explodes on the water, and generally stuns the

fish. The natives show their knowledge of an important principle of gunnery by using a reduced charge for this sort of shooting. There is certain velocity adapted for the penetration of water, beyond which an increase of velocity is disadvantageous. I was much amused once at the disappointment of a gentleman who was very positive that he could shoot three feet of water with his smooth-bored gun. I laughed at the idea, and an experiment was accordingly arranged. A big bathing-tub was to be fired into perpendicularly from the top of a house about three yards high, when I found the tub could only accommodate two and a-half feet of water. I rather trembled for my credit, but was reassured by seeing my opponent loading his gun with a double charge of powder. The firing place was so close to the water that he got thoroughly splashed as he fired both his barrels into the tub, but neither bullet penetrated the bottom. Had he used a single charge he would probably have succeeded with only two and a-half feet.—*J. F. (Central Provinces, India.)*"

VOL. I. PAGE 90.

ENORMOUS JACK.

AFTER we had inspected the salmon-breeding beds which run down the mountains surrounding that remarkably lively place, Maam, I heard that there were a number of jack in the arm of Lough Corrib, which runs up near the hotel. Martin Walsh, the water-bailiff, therefore brought his boat round to the bridge, and he and

his daughter took me out jack-fishing. This young lady seems to be her father's factotum: she cooks the dinner for the whole family, cuts heather from the mountain-top, drives the cows out to feed in the morning and home again at night, tends and looks after the younger children, digs potatoes in the garden, buys wool from the farmers, dyes it with madder and spins it into red flannel petticoats, and is skipper and crew together of her father's watch-boat. It was in this latter capacity I was first introduced to Miss Mary Walsh, and I must pay her the compliment to say that not only does she bear an excellent character for an industrious young woman, but also that she is a very pretty girl, and certainly the belle of the neighbourhood.

While we were rowing quietly along, with the bait trailing behind, Martin told me a story of an enormous jack, which, a few weeks previous to our visit, he found floating dead upon the surface of the lake, near a bed of rushes. The fish had not been long dead, for he was quite fresh. He carried him home on his back with a rope through his gills, and he was such a huge fish that his tail then dragged along the dust behind. We measured Martin, and found that the length of the jack would be about 5 ft. 8 in. Martin did not know what the weight of the fish was, but anyhow he told us that, "eaten fresh, as well as dried and salted, it made plenty of kitchen for the whole of his family for nearly a week." He thinks the jack must have died from old age, as he did not see any marks, or wounds, or injury about him. The fish, as I said before, unfortunately was not weighed, but Martin said it was as much as he could do to carry him home on his back.

But lately I heard of an enormous jack that was being prepared by Mr. Spencer, bird-stuffer, of Great Portland-street; this fish was also found dead in a pond belonging to the owner of Kington Park, Warwickshire. Something had been seen by the owner of the pond jumping about for several weeks past, and they thought it was a large carp; since the jack was caught this jumping has never been seen, therefore he concludes it was the now deceased big jack, which, as it were, committed suicide, for he was found, as I understand, fixed in between a stake and the bank. His length was 4 ft. 1 in., and his weight $37\frac{1}{2}$ lb.

I mention this not only to record the capture of this big fish at Kington, but also to help me to give an approximate idea of the weight of Martin's jack; for if a jack 4 ft. 1 in. long weighs $37\frac{1}{2}$ lb. (and I give a weight proportionate to length), a fish 5 ft. 8 in. long (the Lough Corrib jack) ought to have been 52 lb. in weight.

As regards the relative proportion of the weight to the length of fish, my friend, Sir Philip de Malpas Grey Egerton, writes me as follows: "I send you a formula which was communicated to me the other day for deducing the weight of a salmon from his dimensions, in the hopes that you may be able to test its accuracy. I have only had one opportunity, and the calculation came out very near truth. 'Given the length and girth of a salmon in inches, to ascertain his weight, add one-third of the length, multiply by the square of the girth, and divide by 1000; the product will be the weight in pounds.' Of course accuracy cannot be expected in a calculation of this description, and the result must depend very much upon the shape of the fish; but I

believe it will give us good an approximation as the formula for ascertaining the weight of cattle by their dimensions."

I have applied this rule to jack for the *sake of experiment*, and thus I make out the weight of Martin's jack to be 52 lb. I understand that about thirty years ago a jack was caught in Lincolnshire with a rod and line, which weighed 63 lb. This huge fellow lived under a bridge, and had been several times fished for; when he was at last caught, no less than nine hooks were found in his mouth. The fact was, I hear, much talked of at the period; a notice therefore is very likely to be found in the "Gentleman's Magazine," and if any of my readers have a copy, I should be very glad if they would kindly see if they have any notice of the event. In talking of Martin Walsh's big jack, on the steamer which runs from Galway to Cong, a gentleman told me that a man had caught a pike at Cong which he himself had seen weighed in the scales, and it turned the beam at 47 lb.

It seems to be a curious law of nature, that the larger the space a race of animals have to roam about in, the larger that race will become. Thus, when the forests in central portions of Europe, a hundred years ago or more, were not cultivated or in any way interfered with by man, the antlers of the deer were very much larger than they are at the present day. The collection of horns in various old châteaux, especially that of Count —, and the enormous antlers brought over by Lord Powerscourt, and figured and described by myself in "The Field" of Oct. 25, 1862, will, I think, prove this. The same rule would appear to hold good as regards

salmon—witness, for instance, the enormous fish which are caught at the mouth of the Rhine. And I have it on the best authority that the average weight of the fish in the Shannon is very much greater than those caught in smaller rivers, such as the Galway.

VOL I. PAGE 137.

SALMON-FLY AND SHRIMP.

I HERE give an abstract (as quotations) of a discussion that followed, in "The Field," my remark at page 137, relative to this subject.

In the first place, Mr. Francis Francis writes the following words: "If there be any merit in this discovery, I must put in my claim for a previous discovery." By all means let Mr. Francis put the feather in the cap if he is anxious to wear it.

N. B. writes thus: "I observe a correspondence going on in 'The Field' about what the salmon take our flies for. For my part, I have no doubt on the matter. Every one who has spent months on the sea-shore, and has gazed into the clear depths of the sea in calm weather, must have seen myriads of small fish of every conceivable form and colour. There is no doubt the salmon feed on these, and its brief life is not sufficient to enable it to acquire a perfect knowledge of the natural history of the inhabitants of the ocean, even had it been endowed with the faculties of a Francis or a Buckland. Like a wise creature, it pursues everything that moves suitable for its swallowing comfortably, and thus, when

any of our invitations come in its way, it fancies it sees only a new specimen presented to its palate, and seizes it accordingly—that is to say, if in a feeding humour. I have observed, independently of its colour, that the most killing fly was that which swam the best. The darting motion communicated to the fly by the action of the rod, when fishing for sea-fish, resembles the ordinary movements of the small fry which abound in the sea. I believe also that a fish preying upon another endeavours to get below it, just as a hawk soars above its quarry. When one fishes with an imitation of the natural fly, the method pursued is very different, as all trout-fishers know.—*N. B.*”

“If salmon rise at a salmon-fly because they take them for shrimps, according to the rather strained theory of some of your correspondents, the gaudy colours of the salmon-fly representing the prismatic hues conveniently assumed to be exhibited (but entirely without evidence) by the colourless shrimp, and derived from brilliant neighbouring seaweeds, &c., pray how do your correspondents account for lake and river trout frequently rising to the salmon-fly? Nay, not long ago, I recollect, in fishing the Urchay with a large and brilliant salmon-fly, I drove the hook through the skull of a tiny but ambitious parr not much longer than the fly.

“Now, whatever may be said of salmon and sea-trout, it can hardly be supposed that brown trout and parr know much more about ‘shrimps’ than did Lord Dundreary; so there must be some other reason, at least, for these rising to a salmon-fly.”

“Is not the simplest of all the explanations the best?”

viz., that the fish sees what seems a living and moving creature, suitable for its prey, and if hungry, and the prey looks tempting enough, he goes at it.

“Undoubtedly, the colours and sizes that are to prove most tempting vary very much with states of weather, states of water, and local circumstances, for all of which our knowledge is as yet an insufficient guide; but that the fish studies the natural history of the prey it rushes at, and only takes it if he thinks it a shrimp, or thinks it some particular kind of fly, I decline to believe.—*Freelances*”

“I beg to assure Mr. Francis and Mr. Buckland that there is nothing particularly new in the idea that the salmon fancies some, at least, of the artificial flies which are offered to him to be shrimps. The friend who some forty years since taught me to throw a fly, amongst other secrets of the art bestowed certain flies for catching white trout in the sea or tidal waters—*shrimps* he called them—tied after his own order by Martin Kelly. These flies were composed of pale yellow-green silk body, ribbed with silver tinsel, hackle of a grey cuckoo cock, wing the speckled feather of a partridge’s tail, with three or four strands of mallard for tail. What the trouts fancied them to be I cannot say; but in the waters where he fished he killed a great many. On this hint I improved, and for many years have been using for salmon what we call a shrimp-fly, composed thus:—Body hare’s ear, with a little pale-yellow hog’s wool ribbed with silver tinsel, hackle the grey feather of a jungle cock, wing light mallard, tail the yellow feather of a golden pheasant’s neck, or some sprays of mallard. With this fly I killed two out of five salmon this very

morning. It really does bear a very strong resemblance to a shrimp when in the water—I mean to a *raw* shrimp ; but one of the curiosities of natural history is that the real shrimp with which artful anglers use to inveigle innocent salmon is always (as far as I know) *boiled*, and prawns are used in preference. How will Mr. Buckland account for this ?”

[Aquarius asks a difficult question. May it not be, that in the case of the boiled shrimp it is the colour that attracts the fish ? But I confess I cannot perfectly explain the matter.—*F. Buckland.*]

“In conclusion, I may mention that about a week before the end of the open season for net-fishing my boatman took in the sea three or four salmon which contained a quantity of small sprat or herring fry, and reported the matter to me as very unusual. I have also known an instance of salmon taken on a long line baited with herring, and a white trout (this season) on a long line baited with sprat.—*Aquarius.*”

VOL. I. PAGE 156.

THE RHINE SALMON FISHERY.

I HAVE mentioned in the text the wonderful instinct that nature has implanted in the salmon to run up from the sea to the mountain streams in order to find favourable conditions for making its nest, and for the subsequent well-being of its young.

We Londoners frequently see in the spring of the year very splendid fish on the fishmonger's slab, which

are known as Dutch fish: they often run to an enormous size. Thinking the reader might like to know something of the history of these fish—which come principally from the Rhine—I here give some highly-important and hitherto unpublished (at least in England)* information relative to the enormous salmon fishery which is carried on at the mouth of the Rhine, from whence come such vast quantities of fish to be consumed by the English, and of the details of which, relative to the mode of fishing, annual returns, &c., we know so little.

I was accompanied throughout my journey in Ireland by an excellent friend, who has spent many years in the study of salmon, and we had many a long talk about them—in fact, for three weeks or more, we did nothing else but talk of “salmon, salmon, salmon”—not only regarding them in a natural history point of view, but also in the more important light of a commercial product of the waters, and an almost inexhaustible supply of food for the people.

After my return to London, my friend proceeded to the continent, *viâ* Rotterdam, his purpose being to examine, *en route*, into this very question. He did this, and, on his return, very kindly gave me over his notes, with permission to publish them for the benefit of those who are good enough to peruse these my attempts to diffuse useful information. He writes as follows:—

“On my arrival at Rotterdam I called upon Mons. W. Van Elst, who under a lease from the Government owns the first fifteen miles from the sea, on the Maas,

* The following account was published by myself in “The Field” of October 22, 1864.

the only one of the three mouths of the Rhine through which the salmon migrate; the other two mouths, being sluggish streams by comparison, are not fished.

“Upon this fifteen miles he has only one fishing station, viz., at Orange Nassau, a short distance below Rotterdam, and about fourteen miles from the sea, where the river is about 900 yards in width. The nets he uses are 800 yards in length, and 30 feet in depth, and the meshes are nearly $2\frac{1}{2}$ inches on the square, or nearly 10 inches in circumference. They fish all the year round, and for about sixteen hours out of every twenty-four, except in the winter when the river may be frozen or their nets may be obstructed by floating ice. It is in March and April that they catch the largest fish, of from 20 lb. to 46 lb. English weight each fish; in June and July the fish are from 10 lb. to 26 lb. each; in August the fish are smaller (grilse), of 3 lb., and larger ones up to 30 lb. each.

“It will no doubt be interesting to hear the mode adopted in controlling a net of 800 yards in length and 30 feet in depth. I visited the nets, and went out with the boats and witnessed the whole operation, an imperfect description of which I now send you. The coble boat, which contains the net, is towed out by a small steamer of 12-horse power from the shore to a distance of 800 yards or thereabouts across the river, and with the ebbing tide, as it is only when the tide ebbs that the fish run up the stream; the steamer moves only very gently to the extent of the net, and then slowly moves round at about 150 yards short of the opposite shore, when the end of the line attached to the end of the net is very quickly carried by the steamer back to

the shore, and is attached to a windlass of 15 feet diameter, which is worked by two horses driven at a very rapid speed, which soon pull in the lower end of the net; this is then carried along the side of the river, until the two ends of the net having gradually been brought together, the fish are landed by foreshortening the 800 yards into three lengths, thereby giving the men complete control over the net and the fish contained in it. The fish are *not* killed on being landed, but are removed by means of strong landing-nets, and carried alive into a well-boat close at hand, through which the river-water is constantly passing. They are sometimes retained a week alive in this well-boat; the well-boat is then tugged to Kralingen, three miles from Rotterdam, where they are sold alive to the merchants, who send them to France, England, and Germany for sale, and such fish as may die before they get to market are sold at reduced prices. The steamboat has been used for two years in working these nets most efficiently, and also with two hoises to work the windlass to pull in the nets. A vast amount of manual labour has thus been saved by the substitution of steam-power and horse-power, which is found to answer the purpose completely. There are now four similar steamboats in use for net-fishing above and below Rotterdam, but it is only in such a large tidal river that such machinery is required or could be applied.

“As you are aware, some of the largest salmon sent to London come from the mouth of the Rhine; they are caught on the Maas, at six stations between Moordyk and the sea—about forty miles in length—at Orange Nassau, Isselmonde, Krempen Lek, and at

Moordyke, in Holland. As all the salmon are brought to the same market for sale, it is ascertained that the quantity caught in Holland is about 400,000 annually and their average weight is about 12 lb. to 14 lb. each. This was stated to me by Mons. W. Van Elst, who himself, I understand, captures about one-half of all that are produced. It is an interesting fact that this vast amount of valuable food should be thus created, produced without labour, or care, or cost to man—as these salmon are bred in Switzerland and fed in the ocean—and without any form of human laws to protect them or to control the fishermen. These fish pass through about 600 miles of water from their breeding-ground to their feeding-ground; consequently, if a 20 lb. fish should make five migrations up and down the Rhine, he will have travelled 6000 miles at least; but as your experiments, recorded in ‘The Field,’ show a 20 lb. fish only weighs half a pound in water, we may suppose it would be just as easy for a salmon to swim 6000 miles as it would be for a swallow to fly a similar distance.

“The other five fishing-stations above Rotterdam, in Holland, belong to private proprietors, and three of them are worked by steamboats and horses, similar to the one at Orange Nassau, in lieu of men; it is a great saving of manual labour, that can only be applied in large waters and in calm weather; and as they only fish during the ebbing tide, the parent fish, on their migration down the river, escape the nets; and the meshes of the nets being too large to kill the smolts, they also escape to the sea, and are not seen or caught in Holland, as the waters are too muddy.

“No salmon are caught by anglers in Holland; how-

ever, in Germany great quantities of smolts, young salmon of a few ounces, are caught and sold in the markets there at twopence each. The time required for making each haul of the nets, as above described, varies from fifteen minutes to thirty-five minutes, according to the state of the tide, which floats the net about half a mile down the stream. The net being kept constantly in motion, is never allowed to be placed directly across the river, but always leaves an open space, on the opposite shore, for some fish to escape. The north-east wind is the most favourable for killing fish. Eels are caught by spear, and small eels by angling with a bunch of worms, bobbing as in England; but very few trout are ever caught in Holland of any kind, and these are small, of about 2 lb. each.

“The bridge-keeper at Arnheim, over the Rhine, told me that no salmon are caught between Moordyke (about twenty-five miles above Rotterdam) and Cologne (200 miles). He says the fish go up in floods, and at these times the water is so deep that they escape under their nets. They cannot catch them; only very few indeed are ever caught. The river at Arnheim is 170 yards wide. In 1855 the flood was 25 feet deep, and now it is 5 feet deep. Mons. H. G. Schemmel, a merchant at Amsterdam, told me they have bred vast quantities of salmon in the Zoological Gardens at Amsterdam, and turned them into the Issel river, and seven hundred salmon have been since caught in that river. He has promised to send me a printed report of them, as they are hatched artificially in many places now. At Cologne the river is about 360 yards wide, and 7 feet deep now, and rises to 20 feet deep in floods.

No salmon are caught here, but at a place called Loreley, above Bonn, there are two or three snap-nets used. These snap-nets are suspended in the water, and when a fish comes in contact with the net a man instantly plucks up the sole of the net by a cord, and so clicks out a fish; but in this way they only catch a few—about fifty fish in a year. But as we passed up the river other men informed us they could not catch any salmon between Basle and Rotterdam, 600 miles. With the exception of these few, the river is too wide, too deep, &c., &c. It appears to me that the fish run up in floods, and then the water is too muddy and too large for them to use nets; it is probable that a few may be caught in the Issel and Moselle, but no doubt the instinct of the fish leads it up the main stream into Switzerland to breed (630 miles). A few may be bred on small gravel beds above Bonn, but the Rhine is a muddy stream, and passes over a muddy channel nearly the whole distance from Basle to the sea. I think the Rhine there is too muddy to hatch ova, and too deep and too much flooded to ever rear fry in it; it is navigable 600 miles, and is a safe repository for the large fish to live in, and protects them as effectually as Lough Corrib protects the fish therein, until the spawning season, when they run up into pure small streams to deposit their ova. It seems a marvellous thing that the fish caught at Rotterdam should be bred 600 miles off, and that in their migration they should be so naturally protected; and I have no doubt, as I said before, it is as easy for a salmon to swim 600 miles as it would be for a swallow to fly the same distance. I find the watering-places in Germany are supplied with salmon

from Holland, 300 miles off, although these same fish pass up and down the same river, and within a few miles of this place, but they cannot be caught here; the consequence is, that they have no fishery laws to control the fishermen or to protect the young fish. They are bred among one nation of men, caught in another, and it costs neither money nor care to produce this vast supply of food.

"I enclose you a copy of the return made to me from M. Van Elst; it is most important and valuable, and made out with care by competent persons. It is very astonishing that such a vast amount should be produced within a space of twenty-six miles, at six stations, and that probably not one hundred fish should be caught in the same river for 600 miles beyond.

RHINE SALMON FISHERY.

Return of the total number of Salmon caught in 1863.

Sent to Germany	120,000
" England	90,000
" France	80,000
Sold in Holland	110,000
Total quantity caught in Holland yearly. .	400,000

"The above information was furnished by M. Van Elst's clerk at Rotterdam, Aug. 20, 1864. M. Van Elst's clerk thought the average weight would be 16 lb. each fish, and the price 1s. 8d. per lb., or say 6,400,000 lb. at 1s. 8d. per lb. = 533,333l. 6s. 8d."

I trust my readers will second my motion of thanks to my friend for the above interesting and valuable information.

VOL. I. PAGE 169.

BOG BUTTER.

THERE can be no doubt that the substance found in the bog near Oughterard (as mentioned by Mr. Buckland in Chapter IV. of his "Run through Connemara and Galway") had at one time been butter. A moment's reflection will suffice to inform Mr. Buckland that a pure animal fat, such as butter, would be much more readily converted into adipocere than "the muscular and all other soft parts" of dead animals. It is well known to Irish antiquaries that butter formed the principal animal food of the ancient Irish, that they did not like it in a fresh state, and so buried it in bogs, to acquire thereby a rancid flavour. "*De gustibus non est disputandum.*" The celebrated statistician and political economist, Sir William Petty, when describing the food of the Irish, about the middle of the seventeenth century, includes "butter made rancid by keeping in bogs," and by way of adding a pungency to this rancid flavour, the butter was not unfrequently mixed with garlic, as we learn from the "*Hesperi-neso-graphia*," published towards the close of the seventeenth century, where bog butter, as one of the household stores of a native Irish gentleman of the period, is thus alluded to:—

But let his faith be good or bad,
He in his house great plenty had
Of burnt oat bread, and butter found
With garlic mixt, in boggy ground,

So strong, a dog with help of wind,
By scenting out with ease might find.
And this they count the bravest meat
That hungry mortals e'er did eat.

As may readily be supposed, considerable quantities of this bog butter, through various accidents, have not been disinterred until our own times; and thus it forms one of the more familiar objects to Irish antiquaries. In the museum of the Royal Irish Academy there are numerous specimens of bog butter, all changed into a perfect state of adipocere, generally resembling hard dry Stilton cheese. There are also the various tubs, firkins, methers, and other wooden vessels in which it is generally found; and in some instances it has been discovered carefully wrapped up in folds of linen and woollen cloth. Indeed, there is scarcely a local or private collection of antiquities in Ireland which does not contain specimens of a similar description. I may add that this bog butter has been frequently analyzed by chemists of European reputation, and in every instance the result proved that it had been originally butter: that is to say—and Mr. Buckland will no doubt understand me—as far as chemical analysis can distinguish between adipocere formed from butter and the same substance formed from a dead animal. I imagine there are certain chemical conditions that would effectually prevent a pig or cow that had been buried in a bog from being subsequently raised “under the form of a keg of fossil butter,” even if the well-known antiseptic qualities of the bog did not bar such an unphilosophical transformation. Many curious and startling stories could be told of the antiseptic nature

of bogs. Thus, a few years ago some turf-cutters found the body of a man in an Ulster bog; and so well was this body preserved, that an active constabulary officer noticed the coroner, and summoned a jury to hold an inquest on the corpse, which, from its skin dress, had probably been dead not less than 300 years.—*William Pinkerton, F.S.A.*

VOL. I. PAGE 169.

CONG ABBEY.

“THE annals of the Four Masters inform us that in A.D. 1198, Roderick O’Conor, King of Connaught and Monarch of Ireland, died at Cong, and that his remains were conveyed to Clonmacnoise, and entombed at the north side of the altar of the great church there. Cathal Croodearg (*the red-handed*), King of Connaught, having leagued with William Fitz-Adelm de Burgoor Burke (the first of the Burkes that came to Ireland), they marched to Cong, where they spent the Easter. While there this William Burke and the sons of Roderick O’Flaherty entered into a conspiracy to murder Cathal, but it was providentially discovered and defeated. A.D. 1226, Nuala, Queen of Ulster and daughter of Roderick O’Conor the monarch, died at Cong, and was interred in the canon’s church there.”

VOL. I. PAGE 171.

THE CONG SALMON PASS.

I HAD not (as will be perceived from the text) intended to give an account of this pass. On mentioning this to a friend much interested in fisheries, he told me that he thought it would be a pity to omit it, as it might be useful to gentlemen interested in opening up salmon passes in mountainous countries. I have, therefore, introduced it into the Appendix, and trust the reader will approve. It was published in "The Field," Nov. 19, 1864.

MENTAL PHOTOGRAPHS—THE CONG PASS.

DURING the last few months I have found myself called upon in my travels on the west coast of Ireland, in pursuit of facts relative to the natural history of the salmon, and on the west coast of France (when endeavouring to unravel some of the mysteries which at present infold our knowledge of the economy of that mysterious mollusk, the oyster), to take accurate mental record of scenes, places, and objects, the minute details of which may, and even have already been the subject of severe cross-examination before Parliamentary and other inquiries. It became therefore necessary to find some plan of fixing these various facts

firmly and distinctly in the memory, and I have hit upon a plan which I am gradually working out, and would here venture to suggest to my friends. I find myself, we will say, at the foot of the celebrated Cong Pass, of which I propose to treat in the following chapter. It is necessary and most important for the observer to recollect the details of this pass. I therefore imagine my two eyes to be the two lenses of the apparatus by means of which stereoscopic views are taken, and the eyelids to be the covers placed by the operator on those lenses—the brain to be the sensitive plate on which the picture will be fixed. I make up my mind what shall be the exact extent of the picture I wish to take in, and then suddenly opening the eyes (taking the cap off the lenses as it were), allow the process of fixing the picture to go on for a certain space of time. When I think it is firmly fixed I close the eyes, and so taking it into the dark chamber examine the details. If these are not *quite* perfect on the plate of the memory, I again place it in my imaginary apparatus, and endeavour to get the details as perfect and as distinct as possible. This process I have found by experience after a time lapses into a habit, and a most useful habit it really is; for I find I have at this moment before me, as it were, mental photographs of the Cong Pass, with the details of its most important features.

Our principal object in visiting Cong was to examine carefully the wonderful fish-passage which has been made between Lough Corrib and Lough Mask, especially with reference to converting, by means of it, the tributaries of the latter lake into spawning-ground for

the improvement of the salmon fishery. The lake lies in a direction almost due north and south; it is ten miles in length, and little more than four in width. The Robe empties itself at Ballinrobe, and this river would form excellent spawning-ground for fish, if they could once get there. Were it, therefore, possible that a passage could be made for them to go up, an area of no less than about 300 square miles of ground would at once be laid open. If the reader will look at the Ordnance map of Ireland, he will see that a neck or spur of land, about eight miles in length and four in width, is marked as intervening between the lakes; but when the visitor comes to examine the locality itself, he will find that this neck of land is in fact, so to speak, the spur of a mountain. The natural outflow for the water from one lake to the other is underground, through caverns and subterraneous passages; and just above the mill at Cong, at the head of Corrib, can be seen two enormously deep pools, from the bottom of which the water continually bubbles up with a mysterious and almost unearthly motion; in the summer the water wells up gently, but in the winter, as an old woman told me, "it throws up wildly, just as strong as water boiling in a pot," as though some Titan was confined in chains below, and with mighty efforts was endeavouring to throw off the watery garment that bound him to his prison-house.

It has long been thought desirable that a connection should be made between these two lakes, for the purpose of navigation. In the time of the Irish famine, I believe, a canal was cut from one end to the other over the spur of the mountain from Mask to Corrib. The

works were begun in 1846 or 7, and left off 1852, but the project has not turned out as yet to be of any service whatever, and for all these years has remained perfectly useless. The fall from Mask to Corrib, I should here mention, is twenty-eight feet. With that energy and perseverance which characterize the proprietors of the Galway fishery, they determined to see if they could not turn, by means of this pass, Mask and her tributaries into a breeding-ground for their fish, for the simple reason, that the greater number of young fish hatched, the greater number of old ones would eventually be produced. It is quite evident that if we have no boys and girls we can have no men and women; and the more infants there be, whether of fish or men, the greater will be the supply of adults: it is on this principle, therefore, that it became highly necessary to add as much spawning-ground to the Galway fishery as possible.

Anxious to examine the state of this canal, I walked the whole length of it from the bottom to the top, the total distance being about three and a-half miles. At the point where this fish pass joins the stream that enters into Lough Corrib, the ground is comparatively level for about 500 yards, the bottom consisting of massive rocks, the hollow ground between which forms numerous little pools; in these pools I was surprised to find large numbers of young salmon, evidently of this year's hatching, being about the size of small minnows. These fish, I regret to say, were, as the water evaporated, gradually dying down. I found considerable quantities of them actually dead, with their gills extended wide open. The question is, have these fry

descended through the pass from Lough Mask above, or have they been hatched at or near the places they were found? On looking about me I observed in this part of the pass several salmon nests, no less than sixty in about 180 yards, which had been turned up by spawning fish. I am therefore most certain in opinion that the young fish found in the pools have *not* come down from the lakes above, but have been hatched from the beds which we saw close to them, and from which they had in due season emerged. The fish, heavy in spawn, tried, as long as they could, to get up the pass, but, failing so to do, fell back into the lower regions of the pass by the bridge, and then placed their eggs in confused heaps, one nest over the other. That these little salmon should have lived so long under such disadvantageous circumstances is very astonishing, and I confess my wonder was greater when I observed fish of last year's growth in a pond made by a bend of a pass, and also fish of about two inches long in pools which were gradually drying up some two hundred yards above the bridge. A short distance from the bridge the pass takes a slight turn to the right, and thence for a space of about five hundred yards planks of wood are firmly bolted into the bottom of the pass, and these act as salmon ladders in assisting the fish to pass literally "over the mountains."

As we walked higher up the pass I at once saw why it would never carry water properly, for the whole of the bottom and sides were, so to speak, burst wide open, leaving enormous fissures, which are locally called "swallows." Some of these are about ten feet long, and from one to two feet wide, and call to mind the

crevasses (on a small scale) that are met with on the Swiss glaciers. The fact is that the mountain limestone rocks which form the spur of the mountain between Lough Corrib and Lough Mask have, at some period or other in geological times, been upheaved, and the various strata separated and dislocated one from the other. The geological formation of the country will at once explain how this happened. To the westward of Galway an enormous mass of granite has been thrown up, and the "Twelve Pins" and the other mountains about Maam are plain evidence that terrific volcanic action has taken place below. This disturbance naturally cracked and dislocated that portion of the limestone near it, and at the same time formed the hollows in which water accumulated, thus accounting for Loughs Mask and Corrib. The idea of this tremendous volcanic shaking having taken place was fully confirmed by the state of the rocks at some little distance up the pass, for here I found them disjointed and broken up in the most marvellous manner, reminding one more of knobs of sugar in a sugar-basin than anything else.

To make a pass for the salmon over this terrible broken ground was a great problem, but it has been solved in a very ingenious way, for a huge iron trough, like half one of the large water-pipes one sees in the London streets, three feet in diameter, and measuring no less than 1000 feet in length, has been placed down over these broken stones. This trough was made in England, and transferred all the way to Galway in separate pieces, and then fixed in its place with coping stones and cement. The expense incurred in this

operation I leave to the imagination of the reader. When the water is in the pass, it rushes down this trough with great violence; and to enable the salmon to withstand this, resting-places have been made for them at various intervals.

The question now arises—and a very important question it is—do the salmon avail themselves of this iron highway placed for their convenience over the rocks? The question was answered by Burke, the water-bailiff, who informed me that he has seen seven or eight salmon together struggling and fighting with the water in order to ascend through the iron trough, and every now and then resting awhile in the resting-places which have been formed for them. Still, however, it is a disputed and a very doubtful point whether these salmon eventually get up into Lough Mask, or whether they have not fallen back and made the beds which I have described as existing in the lowermost portion of the canal, for, as yet, not a solitary adult salmon has ever been seen in Mask. Even supposing the fish have managed to get up through the iron tube, they have even then a very long distance to swim, before they get to the sluice through which the Mask water pours itself into the pass. My friend, Mr. Ffennell, confirms the opinion which I and others interested in the subject hold, that this would be *the* most difficult point for the salmon to overcome, for here they would have their greatest battle with a terrific stream (with the whole of the pressure of the water in the lake behind it) running through iron sluices ten to twelve feet square. I have it, on the authority of Mr. John Miller, that salmon have been

seen to go through the sluice-gates at the Galway weir when the water was coming down with tremendous force; even then these fish were obliged to keep near the centre of the column of water, and to force the passage with a rush, like a harlequin through a hoop; if perchance they came near the surface, the water would hurl them down back into the stream with the force of a round shot rebounding from the side of an iron-clad line-of-battle ship. Those fish that run through the Galway weir, it must be recollected, are fresh-run fish in June and July, and not heavy in spawn; but the fish, as Mr. Ffennell very wisely suggests, which have fought their battle *in the month of October*, through the Cong Pass (which I propose to christen "the overland route"), can hardly be called fresh-run fish, but are, on the contrary, not only tired but also laden heavily with spawn, and naturally in a weak condition.

I regret, therefore, very much to have to record my opinion, with which other much more competent persons than myself agree, that in spite of all the money expended in this Cong Pass, no single salmon has ever as yet gone up through this "overland route" into it, and that the 22,000 acres of Lough Mask are still untenanted by this noble fish.

It now devolves upon us to inquire whether—even supposing there were large quantities of young fry actually in Lough Mask ready to go down—it would be possible for them ever to get down to the sea. I must begin by stating that no adult salmon has ever yet been seen by mortal eye in Lough Mask or any of its tributaries, so that the case is mere supposition. Never-

theless, for the sake of argument, we will suppose that the adult salmon have managed to get up through the "overland route," have forced their way through the Lough gates, and deposited their eggs, that these eggs have hatched out, and the young fish are ready to undertake their journey towards the sea. In the first instance these fish will have to find their way out of the lake. This, by measurement, I find is about nineteen miles round, and the entrance to the pass where the iron gates are situated is about from thirty to forty feet in diameter.

Now there are but two ways for these young fish to go down—the one through the fish pass, the "overland route," and the other through the dark caverns and unexplored subterranean passages through which ninety-nine-hundredths of the water from Musk naturally forces its way into Corrib at the time the fry would be descending; this way, we will call the "underland route." We will *suppose* a shoal of smolts to attempt to get down from one lake to the other into the "underland route;" the chances are that a vast quantity of them would be sucked down by the currents of water which sink straight into the earth, forming a series of whirlpools not very far from the entrance to the Lough gates. If the fish managed to get through the gates into the pass itself, attempting the "overland route," it is, I fear, not likely that they would ever get alive into the lake below, having to run the gauntlet of a labyrinth of thousands of enormous cracks and fissures, as described above. Now, through these "swallows" the water sinks down in enormous quantities; such small bodies as young fish would,

therefore, as easily get sucked down into these terrible swallows as straws are down the gully-hole of a London street after a smart summer shower. These poor little things would then go down, down, down, into what are not unfrequently called the "bowels of the earth," where they would have a much better chance of becoming, by the process of digestion peculiar to the bowels aforesaid, fossil fish interesting to the geologist, than of growing up to be healthy, strong, fine fish, fit for human food.

The fact of the matter is that these innumerable swallows, combined with other difficulties above mentioned, extending over a space of nearly four miles (over the worst part of which only the iron trough has been placed), in my humble opinion entirely put out of court the idea that Mask and her tributaries will ever become a nursery, either for young or old fish, unless it be lined and japanned throughout with a firm sheeting of tin, iron, or copper, and arrangements be made that water should always be running down this artificial pass. The expense of this it is frightful to contemplate, and the idea is of course absurd.

I have received, since writing the above, intelligence that a salmon ladder is now, December, 1865, erected on one side of the iron gates leading into Lough Mask. It is cut in the solid rock, from the canal below up into the waters above, about twenty feet, by a gradual slope. The expense has been very great, and the proprietor of the fishery deserves the highest praise for his indomitable perseverance.

Time alone will prove whether these noble efforts will be rewarded. We must wish them all success.

The reader interested in the great salmon cultivation question has now the leading facts of the case before him.

VOL. I. PAGE 187.

EXHIBITION OF VERMIN TRAPS BY THE ROYAL SOCIETY
FOR THE PREVENTION OF CRUELTY TO ANIMALS.

IN the text I have mentioned the trap trial, and I cannot resist giving in this place some account of it, as its importance as regards the prevention of cruelty to the poor vermin cannot be made too much of.

A few weeks since* a curious and unique exhibition has been going on at the Royal Horticultural Gardens, South Kensington, viz., an exhibition of traps, the makers of which are competitors for the prize offered "for the invention of a trap to supersede the common steel trap." The following are the circumstances under which this exhibition has taken place:—

"A benevolent lady, intensely interested in the matter, having induced several noblemen and country gentlemen to subscribe an amount, kindly placed the same at the disposal of the committee of the Royal Society for the Prevention of Cruelty to Animals. Upon this it was conceived that unless a trap could be devised, having the requisite qualifications to entice and secure vermin, and at the same time be tortureless in its action, game preservers would not be likely to heed a

* This was published in "The Field," July 9, 1864.

protest against the cruel contrivances in general use. The committee have, therefore, offered a prize of 50*l.* for a trap which shall serve the purposes of game preservers without inflicting torture. They have unbounded pleasure in announcing that this project has received the support of many of the leading sportsmen of the country, and that upwards of a hundred models have been forwarded to them in competition for the prize, which are exhibited on this occasion. They rejoice to learn that many humane game preservers have already discontinued the use of the old steel trap, and that others are now awakening to its barbarity. Should the efforts of the committee lead to a thorough consideration of this matter by sportsmen and inventors, the ends of this Society will be served."

On the appointed day upwards of 100 traps were sent in for competition, but whereas at a general meeting of the Society, at St. James's Hall, but few persons could have the opportunity of carefully examining the traps, they have, by permission of the authorities of the Royal Horticultural Gardens, been exhibited on their premises, near my fish-hatching apparatus, for several days past. Having been honoured by an invitation of the committee of the Society to assist in examining these traps, and having had the opportunity of examining them one by one, I shall now take the opportunity of telling my readers something about them. Simple as may seem the problem of entrapping a wild animal, yet the actual practice of so doing is evidently most difficult, for a more ingenious number of contrivances by means of which the mind of man is matched against the instinct of the brute I never before had

the opportunity of examining. There are traps, little and big—some large enough to catch, not the vermin, but the keeper himself who looks after them; some so small, that even a mouse might have a chance of escape; some so complicated, that it requires ten minutes' examination for a human being to understand their action; some so simple, that one is inclined to say, "How is it that was never thought of before?" some so difficult to set off, that one has to tug at the trigger with an iron wire to make it act; and some so delicately contrived that they go off instantly when one only looks at them. Some are devised to crush, some to hold, some to transfix with sharp-pointed spikes; some to guillotine in the most approved French style; some to "pole-axe;" some not only to first entrap the animal, but also to kill him when he is entrapped; some which catch the animal before he has hardly entered the portal of the trap; some which require two animals to make the trap act—one to go in, and the other to pull the spring; some so very trap-like and so decidedly dangerous-looking, that I almost expected to see a notice at their portals, "Pay here, one shilling: no return tickets given."

When we first began our sittings, I stated to one of the gentlemen of the committee that I thought we should find that the oldest of all possible traps, the device used by all savages since the creation of man—viz., the pitfall—would be the idea upon which many of the competitors for the prize would found the conformation of their traps; and this, indeed, turned out to be the case, for the principle of the pitfall has been adopted and diversified in the most wonderful manner.

Among the pitfalls exhibited I would mention a square zinc box with a double lid, each lid being so beautifully balanced that the moment the animal places his foot upon one of them it gives way, precipitating him down into the pit, and instantly rising again for the next comer. This trap can be so made as to catch anything, from a man to a blackbeetle. In this trap the inventor told us he had at one haul captured "a cat, a stoat, and a toad;" at another time a picturesque group composed of "a jay, a hedgehog, and a rat," &c. This trap I propose should be called "The Happy Family Trap." Another ingenious pitfall is that in which a wheel, like a large water-wheel, is set in the run of the animal. One of the paddles of the wheel being exactly even with the ground, the animal treads upon this paddle. It instantly gives way with the weight of the animal, and lets it fall into a hole dug for the purpose; the next paddle of the wheel instantly comes down in the place of that which has just disappeared, ready for the next comer. This trap is called "The Habeas Corpus Trap." There is also a most ingenious mouse-trap, composed of a series of square pieces of wood hung on wires, so that should an animal, like a man crossing broken ice on a pond, attempt to cross over them, one or the other of the loose pieces of wood is sure to give way, and let him fall into the cavity below.

Next to the pitfalls should be mentioned the crushing-traps. Of these there are several kinds—especially one which has been in use in Lord Spencer's park for very many years; and also a trap composed simply of a heavy log of wood and of two common boards.

The trap is set by a most ingenious contrivance of two pointed fingers of iron; the animal steps on a treadle, and the log of wood falling on him immediately crushes him flat. This appears to be a trap which almost anybody can fit up with the rudest material; and what is its great advantage is, that it has no appearance whatever of a trap:--there being a free passage from end to end, and no bait whatever, suspicion is not likely to be aroused in the mind of the intended victim. *

As regards the traps to catch alive, their name is legion. Several are modifications of the hutch-trap; some with doors at each end, some with a free passage through, and some with glass at one end, so that there is *apparently* a free passage through them. Then there is a trap for catching rats, in which there is a great improvement upon the ordinary piece of wire which the rat pushes up with his neck to get in. The pointed wire doors have not the individual wires fastened together, but they act independently like fingers of the human hand, so as to let in either a small or a large animal.

Another of the traps is a modification of the pitfall with the cage. The animal treads on the pitfall, and the cage in an instant springs up from an unseen locality, and covers him over. This is an ingenious trap, and deserves credit, especially for the formation of the springs, which are of india-rubber.

There is a curious trap in which the door is made upon the principle of the check-gate at the Zoological Gardens, so that the animal can go in one way, but cannot get out again; but the difficulty here seems to

be that too much pushing is required. The most novel principle as yet applied to traps appears to be that in which a leaden ball (the size of a walnut) is made indirectly to close the door of the trap. The animal enters the door and advances towards the bait which is suspended for his benefit. As he walks along the board which forms the bottom of the trap, it gradually gives way with him, and as it gives way the leaden ball begins to roll down a trough by its own weight. This act of the ball disengages a chain, and instantly a door rises up at the end of the trap and shuts the animal in, so that the captured beast might well turn round and say to himself, "Who in this world shut the door behind me?" I should imagine that this principle would be well adapted for catching tigers in India.

It is to be remarked that, in all explanations of these traps, the animal to be caught is always *supposed* to go in at a certain place, and again the unfortunate victim is always *supposed* to do exactly what the inventor wishes him to do. I am quite certain, however, that in many cases the animal will not be such an idiot as to do anything of the kind, for vermin are not such stupid creatures as many think them to be. In many instances, however, the vermin will be either trapped or else killed instantly, before, as the Yankees say, "he knew what hurt him."

• PRIZE VERMIN TRAPS. •

IN August, 1864, through the kindness of Mr. Colam, secretary to the Society for the Prevention of Cruelty to Animals, I was enabled to inform the readers of "The Field" the result of the deliberations "of the committee chosen to decide the awarding of the 50*l.* prize for the invention of a trap to supersede the common steel trap, having the qualifications to entice and secure vermin and at the same time to be tortureless in its action." The committee have issued the following circular to the competitors:—

"That, inasmuch as in the opinion of the committee and judges no model vermin-trap submitted to them fully answers to the conditions of the advertisement, which offered a prize of 50*l.*, it is now resolved that 10*l.* be awarded in one or more sums to one or more of the competitors, as the committee may shortly decide; and that the remaining 40*l.* be held in reserve towards a prize which it is proposed to offer early next spring, when a new competition and exhibition will be invited."

The best traps exhibited at the late trial are as follows:—

No. 44. The old steel trap provided with india-rubber gums, to hold an animal without injury; by the Rev. Mr. Baker, Hargrave Rectory, near Kimbolton; 5*l.* donation.

No. 87. A box trap, through passage, with large treadle, cleverly connected with doors which close the

ends; by Mr. John Hancock, of Brunswick Mount, Nottingham; 3*l.* donation.

No. 49. A wheel pitfall.—The animal treads upon one blade of the wheel, and falls into the pit, carrying the wheel round until the next blade closes the opening; by F. E. Hooper, Esq., 17, Oxford-square, Hyde Park, W.; 2*l.* donation.

No. 17. A deadfall, very simple and effective; by Captain Darwin, of the Park, Buxton, Derbyshire; honourable mention.

No. 18. A deadfall; by Mr. W. Chouler, keeper to Earl Spencer, Harleston Park, Northamptonshire; honourable mention.

No. 14. A pitfall made of galvanised iron; by Mr. W. Rogers, Watford; honourable mention.

— A box trap designed to kill.—A knife having three right angles is attached to protected door-springs, and is held down when set by a trigger; the treadle is laid in the bottom of box, and in the centre of a through-run. When the animal touches the treadle the trigger is removed, and the knife flies up with immense power, and, forcing the victim against the end of the box, instantly kills him; (Honourable mention.)

No. 5. Several good house-traps by Mr. Pullinger, of Selsea, near Chichester; honourable mention.

Mr. Baker's trap certainly comes very near to the requirements first made public in the circular, and through the kindness of this gentleman I am enabled to give the following description of it. The motto of the trap is "Skandalon," a Greek word, meaning a piece of wood or trigger on pitfall or other trap, hence the word stumbling-block, offends, scandal. Mr. Baker

believes the common steel trap to be as perfect, though cruel in its way, as anything that has been or can be invented. Taking this, therefore, for granted, his modification chiefly consists of substituting galvanised india-rubber jaws for the ordinary iron jaws. The result is that, instead of cutting into the flesh and bone, the trap grasps the animal's legs firmly between two elastic pads. These pads are found by experiment to hold an animal as securely as iron teeth, and frequently would prove *more secure*, as the leg is often sawn or torn off in the old trap, while the suffering animal escapes. The advantages, therefore, gained are, first, no actual torture is inflicted; secondly, no injury is done to the animal if it be wished to release it, or secure it alive. It has been tried before a party of witnesses, and found to succeed perfectly.

The box trap invented by Mr. Hancock is admirably suited for taking animals alive without injury to them. It consists of a box open at each end, with an apparently free run or passage through it. In the middle of the trap is placed a treadle, and when the animal touches this a wire door falls down upon the top of the box by its own weight, and closes the entrance. I have tried this with a rabbit, and it works very well.

The wheel pitfall invented by Mr. Hooper I described in my last; but I may as well repeat that it consists of a wheel like a mill wheel of four flaps: one flap is set flush on a level or even with a hole in the ground; the animal treading on it falls into the hole, and at the same time sets it again, another flap of the wheel comes round, and constantly adjusts itself in the place of that which has just fallen.

Captain Darwin's deadfall consists of three rough pieces of wood nailed together, so as to form a run of about three or four inches in diameter; above the run is placed a heavy block of wood, or a block loaded with lead; the animal passes through the run, which certainly looks very inviting to such a creature as a rat, stoat, or weasel; he touches a trigger, and the block from above is set free by a most ingenious catch. Any village carpenter could knock up a trap on Captain Darwin's principle in an hour or 'so, and the idea does the captain much credit.

The deadfall exhibited by Mr. Chouler is rather more complicated than that of Captain Darwin; but, from the fact that it has been used for very many years in Lord Spencer's park, there can be no possible doubt that it is a first-class instrument.

The pitfall of galvanised iron invented by Mr. Rogers may be described as follows:—The lid of a square box is sawn in halves down the middle, and each half is set so delicately by hinges, that any creature which places his foot upon it is quite certain to fall into the pit below. This is what I took the liberty of calling the "Happy Family Trap" in my last description, as it would catch anything, from a toad up to a jay.

The killing box-trap is certainly a most formidable guillotine-like instrument: I trust the inventor's fingers may not meet with the same fate by his own trap as did the head of the unfortunate inventor of the well-known French decapitator, the terror of revolutionary times.

Mr. Pullinger's house-traps are already known to the public, and they are certainly very good.

Would space allow it, I have much more to say about this most interesting and important trap trial; and I am convinced that the course the committee have adopted—viz., giving a verdict for “a new trial” next year—will be taken advantage of by many game-preservers, gamekeepers, and others who read the columns of this paper. There is an old saying that it is easier to master the *Pons Asinorum* (or the “Ass Bridge” proposition of Euclid) than to catch a rat: from the number of traps exhibited for the special benefit of the rat, stoat, weasel, and other representatives of the only wild animals now left in this country, I should imagine this to be really the case. Anyhow, the “vermin family” ought to consider themselves highly honoured by so many ingenious and inventive minds being set to work to provide ways and means for their capture; and I trust that the next trial will show that we are not to be outwitted by the apparently ignominious creatures which, when caught, we triumphantly nail on barn walls and kennel doors as trophies of the triumph of human skill over brute instinct.

The trial again took place this last summer; but the award has not yet been made.

VOL. I. PAGE 194.

DISEASED BONES IN CATTLE.

I KNOW a very curious instance of pathological appearances being produced in cattle by the chemical ingredients of the grass which they eat. It is at Swansea, in South Wales, where the bones of the cattle, especially the bones of the feet and head, become enormously enlarged—in fact, covered with what we doctors call exostosis. In many instances, the teeth of these cattle also crumble and drop out of the jaw. By the kindness of a farmer residing in the neighbourhood of Swansea, I have been enabled to make a preparation of the head of one of these animals, and also of several bones of the extremities. The disease is, I believe, caused by the cows eating grass impregnated with some deleterious chemical matter from the chimneys of the copper works at Swansea. It is said to be arsenic or arsenious acid which falls on the grass, but this is a subject which requires a paper devoted to itself.

VOL. I. PAGE 222.

CLAW ON LION'S TAIL.

I HAVE had great difficulty in finding the passage where Homer is said to describe the claw on the tip of the lion's tail. The nearest we can get to it is the following, as kindly hunted up by my friend C. W. Standidge, Esq.

After all, Homer does not mention the claw; he was too good an observer for that:—

“DEAR BUCKLAND,

“*Here's your lion.—Iliad Y or XX, lines 170, 171.*

Ὀυρῇ δὲ πλευράς τε καὶ ἰσχία ἀμφοτέρωθεν
Μαστίεται, ἔρ δ' αὖτ' ὃν ἐποτρύνει μαχέσασθαι.

“*Literally translated.*

“He lashes his sides and thighs on both sides with his tail, and excites himself to battle.

“*Pope-ically translated.*

“He grins, he foams, he rolls his eyes around,
Lashed by his tail his heaving sides resound.
He calls up all his rage, he grinds his teeth,
Resolved on vengeance or resolved on death.

“Nothing about his special claw.*

“C. W. STANDIDGE.”

VOL. I. PAGE 238.

WILD ANIMALS KILLED IN INDIA.

“EVERYBODY is aware that wild beasts abound in the jungles of the Punjab, but we suspect very few people entertain the remotest idea of the frightful number of human creatures, especially children, that are destroyed year after year by these animals. In the two past years no less than 999 children were killed, principally by

* See also Appendix, p. 360.

wolves, as will be seen by the subjoined abstract:—
 1859: Killed, 6 men, 1 woman, and 467 children—474;
 injured, 33 men, 3 women, and 83 children—119;
 total, 593. 1860: Killed, 9 men, 4 women, and 432
 children—445; injured, 24 men and 31 children—
 55; total, 500. The greatest destruction of life occurs
 in the Umritsir division, where 347 children were killed
 during 1859, and 299 in 1860. In the Goojranwalla
 district 77, and in Umballa district 18 children, were
 killed in 1859, and 23 and 70 respectively last year.
 These figures are perfectly astounding, and lead to the
 suspicion that the credit of this exceeding great slaughter
 is not altogether due to the animals to whom it is
 ascribed, notwithstanding the Commissioner of Umritsir,
 in reporting the slaughter by wild beasts of 160 male
 and 181 female infants in his division, says, “it is
 satisfactory that none of the children are of the race
 notoriously addicted to infanticide.” The number of
 wild animals destroyed is not so considerable as one
 would expect, seeing that Government has paid in two
 years 14,386 rupees as rewards for the destruction of
 4,225, which includes a large proportion of cubs. The
 total number of each description of animals killed stands
 thus:—In 1859—tigers, 12; leopards, 192; bears, 187;
 wolves, 1174; and hyenas, 2—total, 1567. In 1860—
 tigers, 35; leopards, 163; bears, 350; wolves, 2080;
 and hyenas, 30—total, 2658. The wolves, we under-
 stand, do the greatest mischief. In the Lahore district
 132 of them were slain last year, and no person hurt;
 while in Sealkote only 28 were destroyed, notwith-
 standing 135 children were killed in the district.
 Similar results are exhibited elsewhere, as, for instance,

the comparison between the wolves and children in the Hissar division is as one child killed to 82 wolves. In the Cis-Sutlej States and the Umritsir division the average is two children to about three wolves. Trans-Sutlej, one child to three wolves. Lahore and Ferozepore, 232 wolves, no children. Goojranwalla, in the same division, 1 to 4—that is, 101 wolves, 23 children. In Mooltan division 622 wolves were destroyed, and only one child, all of which clearly indicates that where the beasts are systematically hunted down the destruction of human life is least. The greatest number of tigers were killed last year at Umballa, namely, 13; and at Kangra the most leopards, 80. Bears also are found principally at Kangra, as out of the 350 killed throughout the Punjab, 306 fell in this district. Wolves abound everywhere, apparently, though, judging from the number killed, they should be scarcest at Peshawur. The wolf is probably the most cruel but most cowardly animal in existence, and a blundering, stupid beast, devoid of the cunning which many wild animals display. He does not sneak up to his prey like the tiger or fox, and attempt to conceal himself up to the moment of his spring, but advances in the open, at a deliberate pace until he arrives close to the object he has in view, when, if he experiences the least resistance (a blow on the head for instance, or a thump from a man's fist), he will immediately show his teeth and snarl, but at the same time turn tail and be off without inflicting injury.”—*Lahore Chronicle*.

VOL. I. PAGE 252.

PETITION CROWN.

MR. VAUX has kindly sent me the following further information relative to this curious coin:—

“Feb. 20, 1863.

“Some time ago you asked about the price for which the Petition Crowns of Simon have from time to time been sold. I could not answer this at the time, but I have now found, in the ‘Numismatic Chronicle,’ vol. xvi., a paper by Mr. Bugne, from which it appears that the highest *recorded* price is 225*l.*, which was given in 1832 by Colonel Durrant for the specimen in the cabinet of Marmaduke Trattle, Esq. This coin was subsequently sold again in 1847 for 155*l.*, to C. S. Bale, Esq., who still possesses it.

“Ever sincerely yours.

“W. VAUX.

“F. Buckland, Esq.”

VOL. I. PAGE 273.

PRIMÆVAL FOREST AT NIGHT.

MY friend Captain Hardy, R.A., of Halifax, Nova Scotia, has given us the following beautiful picture of a primæval forest at night.*

* See “Transactions of the Nova Scotia Institute of Natural Science,” vol. i., part 1. W. Gossip, Granville Street, Halifax, Nova Scotia.

"I have always noticed that in the small hours of the morning there appears to be a general cessation of movement of every living creature in the woods. Often as I have strolled from camp into the moonlight at this time I never could detect the slightest sound—even the busy owls seemed to have retired. The approach of dawn, however, seems to call forth fresh exertions of the nocturnal animals in quest of food, and all the cries and calls are renewed—continuing till the first signs of Aurora send the owls flitting back into the thick tops of the spruces, and calling forth the busy squirrels and small birds to their daily occupation.

"Although almost all of our mammalia are nocturnal in their habits, and many of them beasts of prey, their nightly wanderings and strife with their victims are conducted in the most orderly manner compared with the scenes we have referred to. Quiet, noiseless stealth is the characteristic feature of all animal life in the forest; mutual distrust of the same species, and ever-present tendency to alarm, predominates even in the wildest districts, where the sight of man is unknown, or unremembered at least. At the slightest sound the ruminants and rodents cease feeding—remaining motionless either from fear or instinct: the rabbit or hare thus frequently avoiding detection; whilst the moose can so silently withdraw if suspecting an enemy, that I have on more than one occasion remained hours together on the stillest night, believing the animal to be standing within a few yards in a neighbouring thicket, to which he had advanced in answer to the call, and found at length that he had suspiciously retreated. The great creature had retired, worming his huge bulk and enor-

mous antlers through the entangled swamp, without detection of the straining ear, to which the nibbling of a porcupine at the bark of a tree in the same grove was plainly audible."

VOL. I. PAGE 283.

EXECUTION OF CHUNIE, THE ELEPHANT, AT EXETER
CHANGE.

MR. CROSS, the proprietor, writes in his "Companion to the Royal Menagerie at Exeter Change, 1820," the following account of his elephant, Chunie:—

"There is no record of any animal having been seen in Europe of the volume of body equal to the elephant now forming so distinguished a portion of this collection. His growth since 1810, when he was exhibited on the stage at Covent Garden Theatre, has been prodigious, he being now more than double the size he was at that period. His height is above ten feet, and his weight above five tons.

"The food which constitutes his daily consumption amounts to the weight of more than eight hundred pounds. Familiarly speaking, he may be called an *animated mountain*. His habits are of the most amiable description, and he shows off his qualifications with perfect good-humour, etc."

Very true, Mr. Cross, but soon afterwards the poor elephant "went mad," and his execution will be an everlasting disgrace to those who had anything to do with the matter. A long account of the slaughter is to be found in Hone's "Every-day Book." I gave an abstract

of this in "The Field," in answer to a question from a correspondent. I am glad I did so, for I am able now to give a much more authentic account from an eye-witness, who kindly wrote to me on the subject:—

"May, 1857.

"In 'The Field' of May 9 I observe that you have favoured the readers with an account of the slaughter of poor Chunie, the elephant, at Exeter Change. You say it is from Hone's 'Every-day Book,' but I think Hone does not give it quite correctly.

"As one of the perpetrators of that cruel deed, if you choose I will tell you what I saw done that day.

"I was at the gunmaker's, Stevens of Holborn, when Mr. Herring, of the New-road, came in to borrow rifles, and beg Mr. Stevens to return with him to the 'Change to shoot the elephant. Mr. Stevens was a man in years, and full of gout, and I knew directly what would happen; he pointed to me as the one for his substitute, and in a very few minutes I had selected the rifles, cast balls, etc., and we were on the way to the Exeter 'Change. We arrived there, and found the greatest confusion; beasts and birds most uproarious, set on by witnessing the struggle to keep in order the ungovernable elephant. The teething season was supposed to be on, but your description of the state of the tusk appears to settle that question. Mr. Cross was much vexed with his coming loss, and Mrs. Cross in tears.

"I was supposed in that day a steady rifle shot, and

with Mr. Herring, in my conceit and ignorance, intended to kill the poor brute with our first fire. Dr. Brooks had tried the poisons, and by his directions we fired into a crease rather below the blade-bone. I expected to see him fall ; instead of which he made a sharp hissing noise, and struck heavily at us with his trunk and tried to make after us, and would but for the formidable double-edged spear-blades of the keepers. These spears were ten feet long, at least, wielded from a spiked end below, and the trunk wounded itself in endeavours to seize the double-edged blades. It was most fortunate the poor beast stood our fires so long afterwards, for, had he fallen suddenly, and struggled in death, his struggles would have brought him from out of his cage or den, and if he had fallen from the strong flooring built under for the support of his great weight, my belief is, through the whole flooring we should have all gone together, lions and men, tigers and birds. He struggled much to come after us, and we were compelled to reload in the passage, and after firing about six shots more the soldiers came from Somerset House ; they had but three cartridges each man, and I forget now how they were allowed to come off duty. He bore the presence of the soldiers much better than ours, and I for a time was compelled to load the muskets for the men ; they had not the least notion of a flask : they run the powder into the musket-barrels in most uncertain quantities, and I was compelled to unload and reload for them, or we should have had some much worse accident. The murderous assault was at length closing, and I entered with a loaded gun, taking the last shot as the noble brute seated himself on the haunches ; he then folded the

forelegs under him, adjusted his trunk, and ceased to live, the only peaceful one among us cruel wretches; and the only excuse I can now find for the cruel slaughter is that it was commenced and must be finished. Poor brute! it was a necessary though cruel act; he was ungovernable in a frail tenement.

"I will add an anecdote of good nerve in the killing of elephants that I have learned since then. A gentleman killed elephants in Ceylon frequently with one shot. He faced them singly, and with extraordinary nerve waited till the elephant stopped, which he does at about thirty yards, before making his rush; he then fired at the centre of the head, at the base of the trunk, and killed him. The bodies were left about twenty-four hours to the beasts and birds, and the great scavengers the ants, when there was a beautiful skeleton specimen to choose from, and tusks for profit.

"I saw a fine head and tusks of this gentleman's at Lang's, in the Haymarket, a few years back. The head was beautifully cleaned, and from the floor stood very nearly the height of the table.

"I am, Sir,

"Your obedient servant,

"ARMOURER."

APPENDIX.

VOL. II. PAGE 13.

MARINE MENAGERIE.

THE following was published by my friend, Arthur Crichton, Esq., in "The Field :"—

SIR,—The very amusing and most interesting experiments made use of by Mr. Buckland to prolong the existence of the invalid porpoise, and the general remarks contained in his very practical letter, suggest to me that a short account of an interesting exhibition of fish and wild animals, kept by a Mr. Cutting, at Boston, which I visited in the course of a tour in the States, exactly twelve months since, may not be out of place at this time. I make the following extract from my diary as then written :—

" The chief feature of this collection is a noble living specimen of a white' whale. With the exception of another specimen at Barnum's, I suppose this is the only, and it is really a wonderful, instance of a whale being kept in healthy confinement. It was taken about a year ago at the mouth of the river St. Lawrence, and was dragged by horses through the woods and along the roads in a wooden box, packed in wet seaweed, pails of water being dashed over him at every convenient

opportunity. He is kept in a splendid circular tank, some five yards in diameter, placed in the centre of the room, with a fountain playing from the midst. There is also a dolphin, a sturgeon, and various other smaller fish in the same tank.

“I have often heard it stated that the dolphin and the whale are inseparable companions, and that they are fond of each other’s company. Though they are necessarily forced into each other’s society by the limits of the glass-house in which they are immured, yet the above is, in the present instance, very beautifully exemplified. There they go, pursuing their endless round beneath the fountain, our friend the dolphin easily outvying in speed his more unwieldy comrade, and occasionally darting across his back with the most complacent self-reliance.

“Indo alios incunt cursus aliosque recursus
Adversi spatii.—ÆNEID, Lib. v. 583.

“It is a curious sight to see these creatures every few moments coming up for air, thrusting their snouts above the water, and spurring forth the pent-up gases which they have exhausted from the briny fluid from an orifice, with which they are provided upon the surface of the head, with a force and noise that reminded one of a badly-fitting slide-valve to a steam-engine, and descending again with redoubled vigour. Sometimes the long, pointed dorsal fin of the dolphin, rising above the water, would shine and heave like a silvered plough-share.

“The proprietor tells me that he is training the dolphin to draw a good-sized boat which floats upon the tank, and if he does credit to his instructions he will be

harnessed to a shell and driven by a boy in accordance with the old classic legend. If Charles Waterton could only have seen this exhibition, what an interesting chapter he would have written!

"After minutely examining the various smaller aquaria that surround the room, and are well worth a visit from the naturalist, inasmuch as they greatly surpass in comprehensiveness those in the collection of the Zoological Society of London, I descended to the room below. I here found a number of wild animals in cages; and they had succeeded in making some of them more tractable than, had I not been an eye-witness, I could have believed it possible.

"Beyond this was a square inclosure, half water, half platform. On the latter was seated—if such a term can be applied to an animal which is by nature comparatively denuded of the wherewith to sit upon—Ned, a small marbled seal, resting upright upon its tail, and tossing its knowing little head with a singularly quaint and nervous jerk. At one corner of its platform stood an object apparently peculiarly out of place, viz., an Italian hurdy-gurdy. 'Surely the seal does not play the organ?' I observed. The proprietor informed me that a performance would take place at eight o'clock. I was aware that the instrument required no extraordinary amount of talent to master—but fancy a solo by a seal! Well, eight o'clock arrived, and the audience crowded to their seats. 'Now, Ned, let me hear you play the ladies and gentlemen a tune;' and obedient to the word the creature awkwardly sidled forward, and, grasping the handle with its pendant fin, rattled through the music at a most alarming pace; looking up ex-

pectant the while to receive what other public performers are not unwont to indulge in—a finale, in the shape of a fish supper. ‘Now, Ned, give the ladies a pretty kiss;’ and the animal nodded its head and kissed its flapper with most *finical* politeness. ‘Very well done!’ Another fish. ‘Now, show us how the ladies bathe at Newport.’ The demand was scarcely uttered before the sagacious creature dashed into the water and commenced jumping up and down, splashing the water with its fins, and ducking its head in a manner that produced the most ridiculous satire upon ladies in the same predicament.

“I remained to see the whale and dolphin fed—a very interesting sight. The manager ascends, by means of a ladder, to the top of the tank with a pailful of eels. These he holds, one by one, with a pair of iron pincers, and the creatures come up and take them from his hand. The whale consumes about thirty pounds weight a day, and the dolphin about twice that quantity.

“ARTHUR W. CRICHTON.

“Oxford and Camb. Club, Dec. 9.”

VOL. II. PAGE 17.

ANATOMY OF THE PORPOISE.

WHEN the poor porpoise which was brought to London alive was found floating dead on the top of the seal pond at the Zoological Gardens, Mr. Bartlett consigned the unfortunate animal to me; and at a scientific meeting of the Zoological Society, in December, 1862, I had

‘the honour of reporting the results of my examination, and submitting what preparations I had made for future demonstration. One of these, I fancy, is somewhat rare—it is the brain, and a very well-developed brain it is, weighing 1 lb. 1½ oz. This specimen I have, at the request of Professor Rolleston, presented to the University of Oxford. There are, however, other parts of the animal, which I shall here endeavour to describe.

Now, there are two ways of dissecting an animal—the one, the simple fact of rudely cutting it up, taking the skin off, making a casual inspection of the viscera, &c., and then throwing “the bits” away; the other mode (and, in my opinion, the proper mode) is to start with the preconceived idea that you are about to examine the details of an intricate animal machine, the composition of which, although bone, flesh, and blood, is so wonderfully and admirably put together, that no human art can equal, and certainly not excel it—that it meets most perfectly all the conditions of life, whether on dry land, water, or mid-air, in which the creature passes its existence.*

• Now, in the porpoise—though he may be “common” enough, whether seen alive by visitors to the sea-side, or dead on the London fishmonger’s slab—we have a capital and really wonderful example of the power of nature, and the beauty with which she is enabled to

* This rule cuts both ways, because, having ascertained the laws of nature’s mechanics, we are enabled to ascertain, from fossil remains, to what manner of beast a bone belonged; and hence, by what is called the law of correlation, to predicate, almost for a certainty, what the habits of the animal must have been, and hence, further, the conditions in the former state of the world when it was alive.

solve the most difficult questions of complicated mechanics. In order rightly to understand this point, we should consider such a problem as the following placed before us:—"You are required to construct an animal which shall be warm-blooded, have lungs, and a four-cavities heart. It shall be strictly mammalian in every sense of the word, both as to skeleton and internal organs, especially of respiration. This animal is to be born in the ocean, and to live in the ocean all its life. Send in your plans showing how you propose to adapt a mammalian structure to the ordinary conditions of a fish's existence, and especially demonstrate how you would conform the nostril so that not a drop of air should ever, at any time, enter the lungs. The animal shall never, for a moment of its life, be out of water, in a more or less turbulent condition; yet so contrive that not a drop of water shall ever get into or near the lungs." I think this would be a puzzler for most of our engineers, yet see how beautifully nature has met all these required conditions. In the first place, therefore, the bones of the porpoise are not firm and hard; the mineral matter is not in excess, as in the hard bones of birds, but oil takes its place; the bones are not soldered tightly and firmly together, they are in every way elastic—in fact, the beast is always carried on elastic springs in the water.

It is one of the laws of nature that all mammalia should have *seven* bones in the neck (cervical vertebræ): man has seven; the long-necked giraffe seven; the horse seven; the camel seven; the porpoise and the whale seven. The long and supple neck is of great service to the giraffe and camel, but it would be useless

and much in the way in the case of the porpoise; he needs only a short neck, for he can turn his whole body in the water in a moment, whereas an animal with four legs, if he had not a moveable and pliant neck, would be a very long time shifting his four legs and turning round to look at his enemy or for his friend. Nature will, nevertheless, not break her law; even the porpoise has a very short neck indeed. In the giraffe the seven cervical vertebræ attain their maximum of length; in the porpoise they are diminished to their minimum. My specimen was 44 inches long, yet his neck (the specimen is now before me) measures but half an inch; the first bone, indeed, which supports the head, is wide enough for its work, but the others are all compressed together, somewhat like a number of small saucers placed one upon the other.

The difficulty of the neck got over, the other bones of the back are easily enough designed; due regard being taken, as regards their joints, to the work they have to do, and a hint taken every now and then from the backbone of the fish.

Now what must be done about the four extremities? A porpoise must not have a hoof like a horse, a wing like a bird, nor yet a fin like a fish; see, therefore, the compromise between the three. When we see the live porpoise in the water, we observe that his mode of progression is by two *paddles* in front and one paddle behind. The front paddles *externally* look like fins, but dissect off the skin, and you will find underneath four regular fingers and one thumb, a wrist-joint, two bones of the fore-arm, one of the arm proper, and a well-formed blade-bone into the bargain. These fingers

are outspread, like a man's hand uplifted in a state of wonder; and they have all, as it were, been set fast in one solid glove, which is formed of the skin proper. Thus they cannot ever act independently, but of necessity working together in one plane, shut up in a skin case, form nevertheless a most excellent working water-paddle. The porpoise has *no* hind legs; they would be of no use to him. In the "Talking Fish," or seal, which I have lately dissected, the hind legs and tail are united, so as to form a capital swimming flap. In the porpoise all the progressive motion proceeds from the tail. This tail is not fastened on like a fish's tail, but as *we* might call it, it is joined to the body "the wrong way"—that is, it is at right angles to the body and not parallel with it. Its mode of working is obvious: the porpoise breathes air, he must come frequently to the surface to get it, and a single flap of the tail will bring his nose up to the surface from a very great depth. He is said to use his tail in the same manner as the boatman does his *one* oar when propelling the boat from the stern, *i.e.*, by a sculling motion. I would like satisfactory evidence of this, as my porpoise progressed in the seal pond by simply flapping his tail backwards and forwards without any sculling motion whatever. •

Now we come to the most difficult problem of all, *viz.*, how to prevent this mammalian air-breathing animal from being every minute of his life subject and very liable to death by drowning, and a most beautiful bit of mechanism we have before us. A porpoise has been most appropriately called a "sea-pig"—a "hog-fish;" and when he was on the bench being operated on, his carcase was amazingly like that of a great fat bacon pig.

We will, therefore, take a pig's skull, and make our comparison. In the pig, the nostril runs along the whole of the long nose, through a hole made there on purpose by nature; in the nearly as long-nosed porpoise, this hole is soldered up, the upper jaw is quite solid, and, with the under jaw, is devoted entirely to the purpose of catching his food. If we take a pig's skull, and bore a hole in a backward curving direction from the top of the skull into the under surface thereof (coming out just behind the palate), and when the pig's windpipe comes to this point, turn it up *into* this hole instead of prolonging it along the upper jaw, we have a good model of what we actually find in the porpoise. Upon making a section of the skull of a porpoise, we shall find a curved hole bored through its substance by nature, and the windpipe ends (by the larynx) in this hole, and does *not* prolong itself into the upper jaw at all. The larynx, or Adam's apple, also is very peculiar in shape; it is elongated like a human finger, and fits accurately the hole in which it works.

So far, so good. Now, then, contrive your valve which shall never allow water to enter into this windpipe. In the live porpoise we see that he has an opening in the skin, made of the common skin itself, on the top of the head. This opening is crescent-shape, the crescent being directed forwards. Now, this valve is opened by the animal when it wishes to breathe, and it is closed again instantly (like the valve at the bottom of a pair of bellows when being worked) after the respiration has ceased. Passing the finger into this valve, we find two passages, and these are the two nostrils; but the finger cannot pass easily *into* them, and this because there are two valvular prominences which pass, "like the bolt

of a double-lock," right across the nostril into cavities the other side, in which they fit accurately. We have, in fact, in this apparatus the combination of the conical stopper of a wine-decanter with the action of the bolts of a door-lock.

But it may so happen that a drop of water gets through the "bellows valve" at the top of the head, and it *might* trickle down into the lungs. It, however, soon receives notice that "the double-acted valve stops the way." • Supposing this happens when the porpoise is deep down in the water, he cannot breathe instantly, the intruding water must consequently wait somewhere or other till it can be expelled. We find, therefore, above the point where the obstruction exists two large pouches, which, when extended, are as large as oranges, as well as several small ones; into these pouches, therefore, the water *must* go, and there it waits till the porpoise comes to the surface, when—whish—and in a moment the internal valves (which only act one way) give, and out comes air and water all together in that wonderful "spout" which we hear of from sea-going friends as coming from the "blow-hole." •

But, say you, the water may get down his mouth, and so into the larynx. I beg your pardon—nature is up to that; for even were the porpoise to swallow water, the level of the *top* of the windpipe is about half way up the head, and well *above* any water that can come into the mouth again. The soft palate hangs down like a curtain at the back of the mouth, and so shuts off all communication, unless the beast wishes to raise it and let the food go down. The palate, too, has a hole in it,

through which the windpipe plays, that hole being surrounded by a strong compressing muscle, so that any water coming in *that* way would be ordered off the premises in a moment.

In the gigantic elephant we see the nose prolonged to a marvellous degree, so as to form an organ of prehension as well as of breathing. In the porpoise this same nose assumes a totally different form, it becomes literally "snubbed." It is brought right through the centre of the solid head, and it is made to form a valve most complex in its structure, yet most simple in its working. It works day and night, summer and winter—when the sea is as smooth as glass, and when the tempest drives the terrific storm-waves before it—yet it never ceases its guardianship of the life of its owner; it never flags, it never tires. Shall we not pause in our hurried career through life and contemplate such an admirable instance of the power of Him who, when the earth was as yet young, "created great whales and every living creature that moveth, which the waters brought forth abundantly?"

VOL. II. PAGE 21.

SINCE the text of Vol. II. has been in type, I have received the following from Mr. Bartlett:—

"Nov. 6th, 1865.

"In addition to the porpoises noticed in your chapter, we received, July 29th, 1864, a young one from Mr. Bushell, of Deal, that lived four or five days. The next came on the 2nd of September, presented by Walter Meed, Esq., of Liverpool, and lived two or three days.

Another, 27th September, presented by Theodore Grant Cressy, Esq., Aldburgh, Suffolk, and died October 4th, having lived seven days. The next came from Deal, December 26th, 1864, and lived till January 25th, 1865.

"The last was from Dungeness, and came on the 24th of October 1865, and died on the 28th. On Sunday last I heard of another that had been caught at Brighton; this was in a dying state. On Tennant's arrival on Sunday night he brought the dead body here; it is a very large one. I should like you to see it.

"Yours faithfully,

"A. D. BARTLETT."

VOL. II. PAGE 24.

FISHING FOR PORPOISES.

WHEN watching porpoises rolling and tumbling out at sea I have often thought what capital fun it would be if we *could* manage to hook one of these grand lively sea-pigs with a hook and running tackle; for as seen in my experiment, where I fed the porpoise at the Gardens, they will snap at a fresh live bait, made to spin nicely, with the same readiness as a jack. Every pike fisherman knows how to spin for pike,* and I cannot help

* I cannot help here calling the attention of my readers to an admirable little work lately published by my friend Mr. Cholmondely Pennell; it is well written, full of anecdote, and gives the true science as well as the art of fishing for pike; it is called "The Book of the Pike," and is published by Hardwicke, 192, Piccadilly. Price 5s.

fancying that if one were to rig up tackle on a somewhat larger scale, and the bait judiciously trailed near the unsuspecting sea-pig, he might be inclined to take it; and if he did happen to bite and get hooked, as the street-boys say, there "would be a jolly lark;" anyhow, I throw out the hint for yachtsmen; it is worth while trying, if only for the fun of the thing. The line should, I think, be coiled up in a barrel, so that it would run out easily, according to the plan adopted by whale fishermen in the Arctic Sea. I now give some correspondence which took place in "The Field" on this subject. It may possibly give a hint to some gentleman who may not only have an inclination, but also an opportunity of trying the plan.

"I never saw a porpoise take a baited hook, but have heard that such a thing has happened. I do not imagine such a creature hooked could be held with any line of less strength than a cod or conger line; of course it depends which kind of porpoise it might be. If the little puffer, or herring-hog, from three to five feet in length, something might be done with him; but should a large bottle-nosed fellow get fast, of six to eight feet in length, he would dart off like lightning itself, and at least a hundred fathoms of line should be provided for his first rush, after which he might be allowed to tow the boat until tired. The chances, however, are that a man may go in quest of porpoises a whole month without an opportunity, and unless R. L. is a thorough practical seaman and a good swimmer, he had better not attempt it.—*J. C. Wilcocks (Guernsey).*"

"I have heard of several instances of porpoises being caught with a line, but I fear that in order to obtain

one alive this mode of capture is impracticable, as, setting aside the difficulty of landing him, the injury done to his throat, and perhaps to his stomach, by the hook, would, I think, effectually prevent his long surviving his capture.—*Henry J. B. Hancock.*”

“Watching porpoises last month from the south coast of Devonshire, it struck me, and very forcibly too, that one of them might have been hooked with well-arranged snap-tackle, if he would have taken a bait. That one will, under some circumstances, has lately been proved by Mr. Frank Buckland. A light boat and two ‘good oars’ would enable an angler to spin a herring or mackerel a hundred yards from the stern, across or ahead of the animals. The line to come from a strong stiff rod, and a very large reel of easy working. I think the chance of a capture well worth the cost of a few trials by any one with time and ingenuity. Porpoises are often to be seen at great distances, and taking a certain direction. I am ready with further suggestions, should by chance a sportsman think this worthy of attention. What might be the immediate effect of a ‘firm hook’ I dare hardly surmise, for once having fired with duck-shot at a porpoise sixty yards off, I saw the whole shoal alter course and carry on out to sea in a straight line, and at a woeful pace.—*R. L.*”

Then follows a capital hint, which I consider to be a great improvement (and much less dangerous from accidents in the rope fouling, &c.) on my idea of fishing with running tackle. I am much obliged for the hint.

“Thinking that to hook a porpoise would be good

sport, I devised and partly constructed the following tackle, which, however, I have not used for want of information as to whether a porpoise would take bait. Those who have the good fortune to capture one of these animals might throw some light on the subject by an examination of the contents of the stomach." From observing for some years the habits of the porpoise, especially during those periods when mackerel abound round our coasts, I am inclined to think they would. A piece of board, about ten inches square, with a copper bolt fixed perpendicularly through the centre, having on each end a strong swivel; to one swivel would be attached the line, say fifty fathoms; very strong hooks, placed in pairs, about four inches between each two, and fixed to very strong gimp. To the other swivel would be fixed a good strong line, having on its other end a large cork or a bladder. In the event of striking a porpoise, the small board would immediately be thrown overboard, and would form a yielding force to each pull of the porpoise; if necessary the whole line could be thrown overboard, as the bladder would enable its recovery. Weights sufficient to keep the hooks a few feet below the surface of the water must be attached.—*A Salamander.*"

VOL. II. PAGE 30.

CHANG, THE TALL MAN OF FYCHOW.

SINCE my account of M. Brice, the French giant, has been in type, the rival Chinese giant has arrived, in

London, and is now, December, 1865, holding his levees at the Egyptian Hall, Piccadilly. I have published the following account of him in "Leisure Hour," No. 729, and by the kindness of Dr. McCauly, the Editor, I am enabled to add it to my notes on giants, as follows:—

One day this autumn, when in the express train on my road to report on a certain oyster-bed, I read in one of the daily papers an advertisement to the following effect:—

"Peto, the giant of Fychow. His height is stupendous, his strength Herculean, and his weight *four tons*. To be seen at Cremorne Gardens, admission free."

My friend Mr. Bartlett, Superintendent of the Zoological Gardens, happened to be with me in the train, and, upon my pointing the advertisement out to him, he said, "Oh, I know all about that; it is a capital sell. I know the giant's name very well. I saw him at Paris a few days since. He is a *four-footed giant*, with a precious long nose; in fact, he is a huge Elephant that the authorities at the Jardin des Plantes wanted to get rid of. If you recollect, they have been advertising for many weeks past the expected arrival of the Chinese giant, and this is simply a capital idea to forestall the giant market." Of course I immediately went to see Peto; a very fine Elephant was he, but amazingly savage withal. Of Peto and his antecedents at another time.

At about the same time that the advertisement of Peto, the Giant of Fychow, appeared, I received a letter from Brice, the French Giant. The poor giant was in a terrible state of mind about the arrival of his gigantic Chinese rival. He wanted to know all about him, and

if it was really true that the Chinaman weighed *four tons*. Brice had evidently got into a terrible confusion between Peto the giant Elephant and Chang the giant Man.

A few days afterwards, when walking down Piccadilly, I saw a Chinese approaching in the distance. Here, then, said I to myself, comes the real Chinese giant at last. As the man came nearer, I saw he was neither a Chinese nor a giant, but, on the contrary, a miserable-looking "sandwich-board" man, dressed in Chinese costume, and about as unlike a Chinese in appearance and physiognomy as any one I ever set eyes on. His face, instead of being of the "pudding" pattern, with almond-shaped eyes, was decidedly hatchet-shaped; his nose, instead of being of the pure Celestial snub type, decidedly Roman; and his hair, instead of being jet black and as straight as pomade could make it, was a brilliant red, and curled round the edge of his Chinese hat like the hair of a French poodle-dog. The advertisement, however, which this would-be Celestial placed in my hand, told me that Chang, the tall man of Fychow, was to be seen that evening at the Egyptian Hall, Piccadilly, at eight o'clock. They say that a "watched kettle never boils;" and I thought that afternoon a very long one, in my curiosity to pay a visit to the long-expected Chinese giant.

I was naturally among the earliest visitors to the illustrious stranger, and I advise all readers of this to follow my example, so as to get as near as possible to the huge creature. On entering the room one is immediately, as it were, transferred to a private house in China. Chang is seen at the end of the room, sitting

like a stone joss upon a kind of throne, to which one ascends by a flight of carpet-covered steps. He is dressed in the most lovely white satin garments, highly ornamented with beautiful devices wrought in needle-work. At his right hand, on a sort of minor throne, is seated his wife, and at his feet is seated the dwarf, also from China. The steps to the throne are guarded on each side by two Chinamen in their native costume—pig-tails included. The whole party, both ladies and gentlemen, carry fans in their hands, and these they use incessantly, with a grace and elegance that I strongly advise any young lady given to flirting immediately to practise and adopt. In a few minutes Chang rose majestically from his throne, and advancing to the front, still fanning himself, bowed right, left, and in front to the audience, with an ease and elegance that would send an ordinary dancing-master out of his mind. It was neither a lady's courtesy, nor yet the formal bow which we are sometimes obliged to make when habited in that odious garment the evening swallow-tail coat, but a mixture of both a bow and a courtesy, manly, without conceit, yet reverential and respectful to the audience. The giant immediately began a short and doubtless eloquent speech in Chinese, bowing and fanning himself during its delivery, and when he had finished his oration, one of the guardians of the stairs went to a table and read a translation of it, that we, the spectators, might know what we had been listening to.

The poor Chinaman was very nervous, as it was evidently the first speech he had made in a foreign tongue, and to a crowded audience; but I learnt from

Chang's printed autobiography, that the speech was to the following effect:—

“ Rulers and people of the Western Countries,

“ My name is Chang; I am nineteen summers old; I am a native of Fychow, a city in the Au-hwy province of the celestial Chinese empire. The Changs, as far back as the voice of the past speaks to me, have all been great (tall) men. My father, 'Chang Tzing, a scholar and disciple of Confucius; my grandfather, a sage, and famous for his wisdom; my great-grandfather, Chang, the man of war, of whose great deeds our poets love to sing, all were great men, of whom I am the least, the poor and humble representative. My elder brother, Chang Sou Gow, is a soldier in the Imperial army, at Foo-Chow-Foo. He is in height six inches under me; but in width and strength and massiveness, I cannot compare with him. He weighs four hundred pounds; he is known as 'the strong man of the East,' the terror of the Tartar, before the wind of whose hand the rebel flies. Already the Footow of Foo-Chow-Foo has conferred upon him the honorary title of 'Cheen Chung,' leader in battle of one thousand men, and wearer of the mandarin's blue button. He is the favourite of our supreme head, the Heaven-conferred one, whose youth lives as the bamboo, green ten thousand years—OUR EMPEROR.

“ I have one sister living, Chen Yow Izn; she is wed and well; she is only six feet high.

“ My mother lives (she who claims my first duties, with my prince; for who can serve his ruler who has been negligent in his duty to his parents?). She is of ordinary size; and thus her family stands: Chang Sou

Gow the Brave, myself the Tall, and Metzoo my sister, the Domestic Jewel.

"As a boy, I resembled the young bamboo-tree, shooting up tall and slim. At the age of nine years I went to school, and since the age of twelve the classic aphorisms of the founders of our literature, Confucius and Mencius, have been the guide of my life; from them I have learned that 'the more talents are put in force, the more they will be developed,' and 'if something be not added to our knowledge every time a book is opened, we read in vain: that to strive is man's part, but to accomplish is Heaven's.'

"Two years ago the good Chang Tzing, my father, died. He had reached his sixty-fifth year, when Joss (the Divine Being) called him to be numbered with his forefathers."

The speech ended, Chang bowed again to the audience, and then majestically descended from the steps of his throne, caught up the little dwarf in his arms as he passed down the steps, and marched with him up and down the room, carrying him on his arm like a baby. Giants, I know from experience, are very unwilling to have their proper measurement taken by visitors, but I had taken the precaution of ascertaining this pretty accurately. I ascertained, before going, how high I could stretch my hat over my head, and a friend was provided with a piece of red tape, which he measured out as seven feet. As Chang passed us, my friend stood up in a chair, held up his tape, and I held up my hat, as near as we could to the level of the giant's head. On comparing notes we made out afterwards that Chang's real height was *about* seven feet three or four

inches. He, however, appeared of much greater stature; the thick Chinese clump shoes which he wears give him another inch or inch and a half, and his mandarin cap also adds greatly to his stature. His pig-tail is a magnificent specimen of its kind, and hangs from its owner's back like the pennants from a yacht's topmast. I expected every minute to see the little dwarf catch hold of it and swing himself up on the moving mountain, as a sailor swings himself on board ship by a dangling rope.

In vain do we look in Chang's printed autobiography for his height in feet and inches; all we learn is that "he is in height the nearest to the heavens of all other men." I fear Chang is wrong, for my friend M. Brice, the French giant, whom I saw lately at Sheffield, is some three or four inches higher; he has grown considerably since he was in London two years since.

Chang's physiognomy is decidedly pleasing, and he seems a most intelligent young man.

The dwarf rejoices in the name of Chung Mow: he is an active little fellow, and puts one in mind of the pictures of Humpty Dumpty one sees represented in children's story-books as "sitting on a wall." Chung Mow is always laughing, and his great-delight seems to be to bend his right hand backwards, so that the back of the hand touches the wrist. This seems to be his sole performance.

The ladies would probably like to know what Mrs. Chang is like. Well, in my humble opinion, she is decidedly good-looking, and, I will be bound to say, kind-hearted and good-natured. Her hair is brushed well back off the forehead, and she has, I observe, the

good sense not to adopt the *chignon* fashion, a fashion which I am glad to see has not reached China yet. Her name is "King Foo," or the Honest Lily. She wears, as may be anticipated, *no* crinoline; but, nevertheless, her dress is so well put on that it looks graceful. (English ladies, take a hint!) She is an aristocrat, I believe, in her own country, for she has the tiny little feet we have heard and read so much of as being the mark of aristocratic ladies in China. Anxious to see the feet aforesaid, I stretched a point, and was rude enough to ask Madame Chang Fow to be good enough to show me her feet. This she did with great good grace and willingness to oblige. I measured my lady's shoe, and found it was just the length of an ordinary fore-finger. I am the greatest admirer of a lady's *chaussure*, particularly if the foot be small and well shaped; but I really think "the honest lily's" feet a trifle too small, even for my taste.

The giant's wife is attended by a lady's-maid whose name is Ah Ying. I cannot say much for the beauty of the poor maid. Her features denote honesty and good-nature itself, but her face is more like a comical mask than that of any ordinary lady's-maid. The giant's two attendants are respectively called Woo-Kwan-Toon, and Ling Ah Look:

They are highly intelligent, clever-looking young men, and speak English pretty fluently; altogether Chang, with his wife and suite, are well worthy of a visit, and I advise all my friends to go and see them while they are still within reach.

VOL. II. PAGE 31.

JOYCES' COUNTRY.

WHEN we were at that remarkably lively place, Maam, in the county of Galway, Ireland, I hear we were in what was called Joyces' Country.

This race of Joyces have been described as of great stature, exceedingly stout, and endowed with great strength—in fact, giants. Unfortunately I did not see any real living representatives of this gigantic race of Joyces. I was informed that fifty years ago the average weight of the men about Maam was from 15 st. to 18 st., and that they were proportionately tall, and that they had all died out except one or two here and there. I also gained intelligence of an inhabitant of the Joyces' Country, who lived not very long ago, who was called Jack na Banna, or Jack of the Flannel Waistcoat. I could not ascertain his height, but my informant told me “that his jaw was like a pig's jaw, and that a child could sail across the lake in one of his brogues.”

VOL. II. PAGE 36.

THE RUSSIAN GIANT LOUSHKIN.

I HAVE received the following additional particulars from Mr. C. O'Brien, of Madame Tussaud's Exhibition.

“Exhibition, Baker-street.

“SIR,

“The casts of the giant’s thigh-bone and hand were brought over by the Chevalier Le Molt, who had permission from the Emperor Nicholas to do so. To the best of Mr. Tussaud’s recollection, the Giant died at the age of 33 or 34, was married, and had one child, for whom the Emperor stood godfather. He has served in the wars of Circassia with much honour, and received three military medals, now in the possession of Messrs. Tussaud. On the late occasion of a visit by the Grand Duke Constantine, he immediately recognized him, and considered him a very good likeness.

“I have the honour to be, Sir,

“Your very obedient servant,

“W. C. O’BRIEN.

“F. T. Buckland, Esq.”

• VOL. II. PAGE 42.

HEIGHT OF GOLIATH OF GATH.

MR. W. WALKER has kindly sent me the following note:—

“By our present measurements, 1 cubit = 22 inches. 1 span = 11 inches. The height of Goliath of Gath being 6 cubits and 1 span, he was consequently, according to our present measurements, 143 inches in height, or 11 feet 11 inches.”

VOL. II. PAGE 42.

THE GIANT BRADLEY.

By the kindness of Mr. John Busby, of Darfield, Barnsley, I am enabled to publish an account of the above-named giant from his brother:—

“Manchester, 20th June, 1862.

“DEAR SIR,

“In reply to your letter of yesterday, I have much pleasure in giving you all the information I can respecting my late brother William. He was born at Market Weighton, in the East Riding of Yorkshire, on the 10th February, 1787, died 30th May, 1820. When nineteen years of age was 7 feet 8 inches, and weighed 27 stone; he grew another inch, made 7 feet 9. I have his shoe, which is 15 inches long by 5½ wide; walking-stick 49 inches long; his crutch, which he had made a short time before his death, 5 feet 10 inches; his trousers 5 feet 8 long; stockings 3 feet 9 inches from the toe to the top. My father and mother had thirteen of us, and none higher than 5 feet 10. My father was about 5 feet 9½; my mother of the middle size. I never heard of any one of any branch of the family of my grandfather's that was above the ordinary size. My brother took no ale, porter, wine, or spirituous liquor; his drink was tea, milk, and water. He was very active in his youth, and worked in my father's fields, and was an excellent judge of horses. When he exhibited himself in the principal towns in England, Mr. David Waddington, late M.P., the Railway Director, knew him well. His mother was born at the same place. He was interred in Market Weighton Church, and I put up a marble slab to his memory. My parents having a large family, I was put 'prentice to a draper in Hull before I was twelve years of age, that I really cannot tell you the colour of his eyes or hair. When he was eleven years old he weighed 11 stone. I believe I have given you all the information I possess, and I hope it may be of service to you, although a stranger to me.

“I remain, dear Sir,

“Yours,

“R. BRADLEY.”

VOL. II. PAGE 43.

GIANTS IN GENERAL.

MR. EDWARD SIMPSON has kindly sent me the following notes on giants not mentioned in my text:—

“MY DEAR SIR,

“I have just been reading your account of giants in ‘The Field,’ and as you requested further information on the subject, I send you a *little* that I have gleaned from various sources. In the ‘Phil. Trans.’ Vol. XXII., there is an essay of some length on giants by Dr. Molyneux. He refers largely to the gigantic frontal bone in the ‘Medicine School’ of Leyden, and considers that it may possibly have been brought by some of the ‘trading Hollanders as a natural curiosity and proper sample of some huge gigantic man met with in some of their voyages into America.’ He then gives instances of other giants, and says, ‘In Flanders and Germany these men are usually of a larger size, and their bodies of a grosser make than with us. We meet with examples that have exceeded the stature of Edmund Malone of Portlester *several feet*. Isband Diemerbroeët tells us that he saw himself at Utrecht, in the year 1665, a man eight feet and a half high, all his limbs well shaped, and his strength proportionable to his height; he was born at Schoonhoven in Holland, of parents of an ordinary stature. Mr. Ray, in his Travels, mentions this very man, and that he saw him in Bruges in Flanders. But that eminent physician and learned antiquary of the last age, Johannes Goropius Becanus, who lived in Flanders, has left recorded several instances of this kind yet more remarkable, and that were of his own knowledge too; for he says he saw himself a youth almost nine foot high, a man near ten foot high, and a woman that was quite ten foot in height. . . . Andreas Thevet, the famous voyager and cosmographer to Henry III., King of France and Poland,’ in his description of South America, printed at Paris 1575, has a passage so satisfactory on this point, and related with such particular convincing circumstances, all of his own knowledge, that I could not omit setting them down at large. Here he tells us that being himself on the coast of Affrick, in the territory of Arguin, for three weeks together, he chanced to meet with a rich Spanish merchant who had sometime before suffered shipwreck by

a storm, as he touched at that place on his return homewards from the South America; but though he had lost his ship, the greatest part of the merchandize, and most of his men, yet he luckily saved a coffer, wherein he had carefully preserved the skull and bones of an American giant he had brought along with him from that country, who was *eleven foot and five inches* in height, and dyed in the year 1559. These bones he showed to Monsieur Thevet, who was so curious that he took the measures of the most principal of them, and he expresses himself on this occasion in these words, (Anglicè): A very marvellous thing, to which I could scarce have given any credit if I had not seen it myself; inasmuch as the bones of the leg measured full three foot four inches in length, and the skull was three foot one inch about! At the close of the essay, Dr. Molyneux says that it is probable that Og, King of Bashan, was not taller than the giant of the 'Medicine School' Leyden. For, taking the length of the cubit as one foot six inches, and the length of Og's bed as nine cubits (Deut. iii. 7), he adds: 'he cannot imagine but that his bed must of necessity have been much larger than his body; and the least allowance we can make for the overplus is the space of nine inches above his head and as much below his feet; and if we make this deduction, it will follow he was not above twelve foot high.' Rather an original plan for ascertaining a giant's height!

"It appears to me very clear, as you observe, that the size of the skull is no criterion of the height of the individual; but in a letter to Sir Hans Sloane in 1735, Mr. Klein, of Dantzic, gives the dimensions of a large bone (os bregma) of a skull, and taking and comparing it with others, he professes to be able to determine the height of another man, the size of the same bone being known. In the first-mentioned one the height of the head, from the chin to the crown, was 20 inches, the breadth about the temples 12 inches, the height of the os bregma 9 inches (English), and breadth 7 inches. By taking eight different heights of heads according to the rules of drawing, he computed the height of the man to have been 13 feet 4 inches. And having procured another os bregma, the height of which was 5½ inches and breadth 5 inches, with the assistance of a mathematical friend he determined the height of the man to have been 9 feet. The methods by which this result was obtained are given in full in Latin in 'Phil. Trans.,' Vol. XLI., or in English in the letter alluded to. (See Ayscough's MSS., British Museum, No. 4433, p. 107.) In the 'Phil. Trans.,' Vol. XXXIV., mention is made of a skeleton 'of a humane body 9 foot long,' found in a stone coffin near Repton in Derbyshire in the year 1686. The skull was given to the Master of the Free Grammar School, but it was lost. No other dimensions are given.

"In January, 1613, some masons digging near the ruins of a castle in

Dauphiné, in a field which (by tradition) had long been called the giant's field, at the depth of 18 feet discovered a brick tomb 30 feet long, 12 feet wide, and 8 feet high, on which was a grey stone with the words 'Theobochus Rex' cut thereon. When the tomb was opened, they found a human skeleton entire, 25½ feet long, 10 feet wide across the shoulders, and 5 feet deep from the breast-bone to the back. His teeth were, about the size each of an ox's foot, and his shin-bone measured 4 feet!!! Riolan, in 'Gigantologie,' disputes the measurement, and affirms that the bones belong to the elephant.

"In Ayscough MSS., No. 4438, p. 473, is an account of a gigantic child of Willingham. At the time it was written the child was two years eleven months old, and was 3 feet 9 inches high; weight 4 stone. I expect this was only an overgrown child, and do not suppose that when it was an adult (if it lived so long) it was much above the ordinary stature.

"This is all I have acquired, and if of any service to you, you are perfectly welcome to do what you like with it.

"Yours sincerely,

"EDW. SIMPSON.

"12, Limerston-street, Chelsea,

"June 13th, 1862.

"F. T. Buckland, Esq.,
2nd Life Guards."

• VOL. II. PAGE 70.

THE NEW ZEALAND MOA.

It will be seen in the text that my New Zealand friends evidently knew something about what they called the "Moa Bird." In "The Field," of June 23, 1863, I published the following article upon how to trap the New Zealand Moa, or Dinornis. These words will probably cause the reader to smile. "Trap a Dinornis! I never heard such a thing. Why, the Dinornis has been extinct this long, long time. What can Mr. Buckland mean?" I mean, good reader, simply this: it is not right for either sportsman, naturalist, or *savant*

ever to throw away a chance, and I cannot help thinking that there is now a chance, if not of actually capturing, at least of gaining positive information about this curious bird, and ascertaining for certain whether he is really extinct or not—a point, in my humble opinion, by no means as yet positively determined. Two men, not many months ago, swore they saw one alive in the bush, and this is the account as given in the “Daily Southern Cross,” March 6, 1863:—

“They started from the Arrow-township in search of a new gold discovery, which was rumoured as being worked ‘on the quiet.’ One evening they encamped about twenty-five miles north-west of the Arrow.. It was just sundown, and they were sitting by their camp-fire, when one of them exclaimed, ‘Look’ at that rise above us, Jim! there’s some one there.’ They looked and beheld an enormous bird approaching to the edge of a hill immediately above them, at a distance of between 300 and 400 yards from where they were sitting. The bird seemed to perceive the camp fire, and squatted down, keeping its head turned on one side, fixed on the fire. It continued so for several minutes, and at last got up and walked off. Although it stepped slowly it was soon out of sight, the length of its stride being so great. Its height appeared about seven feet, without reckoning the head and neck. Its head was very long and flat, and it carried its neck bent forward instead of carried back, as is usual with birds of the ostrich species.”

The last evidence of *Dinornis* having been seen by human eyes previous to that now placed on record

occurs in a letter from the Rev. W. Williams to my father, Feb. 1842. Mr. Williams writes :—

“ Within the last few days I have obtained a piece of information worthy of notice. Happening to speak to an American about the bones, he told me that the bird is still in existence in the neighbourhood of Cloudy Bay, in Cook’s Straits. He said that the natives there had mentioned to an Englishman of a whaling party that there was a bird of extraordinary size to be seen only at night on the side of a hill near there, and that he, with the native and a second Englishman, went to the spot; that after waiting some time they saw the creature at some little distance, which they described as being fourteen or sixteen feet high. One of the men proposed to go nearer and shoot, but his companion was so exceedingly terrified, or perhaps both of them, that they were satisfied with looking at him, when in a little time he took the alarm, and strode away up the side of the mountain.

“ This incident might not have been worth mentioning, had it not been for the extraordinary agreement in point of size of the bird. Here are the bones, which will satisfy you that such a bird has been; and there is said to be the living bird, the supposed size of which, given by an independent witness, precisely agrees.”

The paragraph from the “ Southern Cross ” of last March went the round of the English papers, but seemed not to cause much interest. The other day, however Mr. Leadbeater, the well-known ornithologist, of 19, Brewer-street, Regent-street, called on me at “ The Field ” office, and asked me if I believed in the existence of the moa, and, if so, how I would set to work to

catch a moa alive. "Why do you ask me this, Mr. Leadbeater?" "Because," said he, "I have received the following letter from Mr. Frank Stevens, now residing at Dingley Dell, Grafton-road, Auckland, New Zealand, dated March 6, 1863:—"

"I have thought it sufficiently important to inclose for your perusal the reported discovery of the moa. This is the supposed distinct race *Dinornis*. If you, or any other gentleman you may know privately of the Zoological Society, would place at my disposal say 200*l.* or 300*l.*, I would undertake to go in quest of this moa, and, if possible, catch him alive.

"You would say, first catch your bird—that I propose to do in my usual style, viz., as I catch a wild pig. I make fast a rope to the trunk of a tree. I run up this rope over a fork of one of the shortest branches, bringing the rope down again to within a foot of the ground, on this I bind firmly two *sharp hooks* with a chain, rope and chain bound together. I take a beefsteak, raw or cooked, and wrap it round the hooks and chain, and bind this firmly with string. Now Mr. Piggy prowls along at night, jumps at the beef, and as he tries to bring his nose to the ground, gets one or both hooks firmly into him, when he usually calls for me in an unknown tongue, which your humble servant is *quite up in*, and I introduce my shining blade and untie his shirt collar. So if you or your learned friends can tell me what 'Moa' eats, whether it is beefsteaks or any other delicacy, why I will try my skill to take this fellow alive; but as he is pretty considerably stronger, I should require a party of five or six to circumvent him and to take the hook out of his mouth without

injuring him. *His foot-prints* have been seen by several separate parties before this description appeared. This bird would bring you into note if procured, and would be worth a large sum of money. If this letter is promptly responded to, I will set out at once to Mr. Rees, who first obtained the account from the two men, and prevent his shooting the bird."

We are not, of course, quite certain as to the actual existence of this bird, but supposing he is found to exist, I should much like to have a consultation with the correspondents of "The Field," who are so much better up in the art of trapping wild creatures than I am, as to how to go to work to catch him. "High Elms," for one, would, I am sure, give his advice. The first question asked by the would-be trapper would, of course, be, What is the food of the moa? In answer to this, I would quote the following conclusion on this point, drawn from the anatomical structure of the bird, by Professor Owen, in his usual masterly way:—

"The unusual strength of the neck indicates the application of the beak to a more laborious task than the mere plucking of seeds, fruits, or herbage. Such small objects cannot be supposed to have afforded sustenance to the gigantic *Dinornithes*; but the still more robust proportions of their cervical vertebræ, and especially of their spinous processes—so striking when contrasted with the corresponding vertebræ of the ostrich or emeu—may well have been the foundation of those forces by which the beak was associated with the feet in the labour of dislodging the *farinaceous roots of the ferns*, that grow in characteristic abundance over the soil of New Zealand.

“The great strength of the leg, and especially of the metatarsal segment, which is shortened as in the burrowing apteryx, almost to the gallinaceous proportions, must have had reference, especially in the less gigantic species, to something more than sustaining and transporting the superincumbent weight of the body, and this additional function is indicated, by both the analogy of the apteryx and rasorial birds, to be the scratching up of the soil.”

Fern roots, therefore, are his food. The bird is tremendously strong; and if you ask the size, I may tell you that the Professor calculates a *Dinornis giganteus* to have been no less than 10 feet 6 inches high. For my own part, I can see no way of trapping him except either by a snare, or else by a hook baited with fern-root, after the fashion of a gorge-hook used by anglers—all this in case of the failure of a pitfall, which perhaps may be the best and readiest way, and least likely to injure the bird.

We have at the College of Surgeons bones of the *Dinornis* that bear marks of human cutting-implements, and these were found near ancient native ovens; and it is pretty certain that they were co-existent on the island, and eaten by its first inhabitants. There is no kind of game indigerous to the island, and, as the Professor remarked in one of his lectures, before the “naked bipeds” arrived to eat the fern-roots the “gigantic feathered bipeds” dug them up.

If Englishmen can discover the sources of the Nile and the North-west passage, they ought surely to be able to settle the point as to whether the *Dinornis* still exists or not.

In order to save time, I have advised Mr. Leadbeater to write to Mr. Stevens, and tell him to go immediately to the place where the *Dinornis*' footsteps have been seen, and to run plaster of Paris into them, thus taking casts of the impression of the bird's foot—a most desirable and important point in the evidence; also to look well about for the droppings, and examine the ferns and brushwood for portions of feathers, or marks of his having scratched up the ground. Feathers, again, may possibly be found on the dresses or in huts of some of the natives. All these points should be looked to; for thus (even if we fail in getting the bird himself) we may get circumstantial evidence of his existence which may be worked out by means of science and induction.

I throw out all these hints because it is often by such little matters as these the greatest results are obtained.

VOL. II. PAGE 70.

EGG OF THE MOA.

ARRIVED PER SHIP "RAVENSCHRAIG."

On Friday, November 24th, 1865, Mr. J. C. Stevens sold by auction a very remarkable egg of the *Dinornis*, or Moa; the following account of which was published in the Wellington papers:—

"DISCOVERY OF A MOA'S EGG AT THE KAI KORAS.—There is at the present time being exhibited at Messrs. Bethune and Hunter's stores, for the benefit of the curious, an object of no less interest than the egg of a moa, another relic of the *rara avis* of New Zealand.

The egg is of itself an object of no common interest to ordinary people, but it must be still more so to those who watch narrowly the development of natural history in its relations to this colony, and the circumstances connected with the finding are calculated to lend a still greater, not to say a romantic, interest to it. It appears, from what we learn from Captain Davidson, of the schooner Ruby, which trades between this port and the Kai Koras, that a man in Mr. Fyffe's employment at the latter place was digging the foundation of a house, and when on the side of a small mound he suddenly came upon the egg in question, and the skeleton of a man, supposed of course to be a Maori. The body had evidently been buried in a sitting posture, and the egg must have been placed in the hands, as when found the arms were extended in such a manner as to bring it immediately opposite the mouth of the deceased. This, it is assumed, was in accordance with the Maori custom, and was done for the purpose of giving the individual who was buried an opportunity of sustaining himself if he thought proper, or if, in the course of things, he required sustenance. Between the legs of the skeleton were found numerous tools, cut from green stone, including a spear, axe, and several instruments, which would lead to the belief that the man to whom the bones belonged must have been, in some way or other, connected with the wood trade—that is to say, if carpenters, cabinet-makers, &c., flourished in his time. All the bones were in excellent preservation, one arm and hand being entirely without blemish. The skull bore evidence of its proprietor having, at some time or the other, received some hard knocks, probably in the

battle-field, while taking his part in some of those terrific encounters which are supposed to have taken place in ancient times. Unfortunately, before the man who was digging discovered the natural treasure, the implement he was using came in contact with the shell, and broke a small piece out of the side of it, but the fragments have been carefully preserved, and might readily be fitted into the aperture. The egg itself is about ten inches in length and seven inches in breadth, the shell being of a dirty brownish colour, and rather better than the thickness of a shilling coin. The inside is perfectly clear and free from all traces of decayed matter. From what Captain Davidson tells us, we should suppose that the ground where this relic was discovered must have been used as a cemetery at some distant period of the past, as Mr. Fyffe had previously found some interesting Maori emblems about the same place; but none of the natives about there—and some of them we are informed have arrived at very mature ages—have the slightest recollection of even having heard, as a matter of history, that any of their ancestors had found a final resting-place in that particular locality.”

After a spirited competition, this fine specimen (which I understand was insured for no less than 1,000*l.*) was *bought in* at the sum of 200*l.*

VOL. II. PAGE 70.

HAVING read my notice in the last “Field” on this subject, my friend, Mr. E. Blyth, has kindly forwarded

me the following additional evidence upon this much-mooted point. It is from a paper by himself, in the "Journal of the Asiatic Society, 1862."

F. BUCKLAND.

"Of the New Zealand moa, at least two species have just been discovered to maintain a lingering existence, as I have learnt from a letter recently received from Mr. E. L. Layard, who is at present in New Zealand as private secretary to Governor Sir G. Grey. One of these, of comparatively small size (about $3\frac{1}{2}$ feet high), had actually been killed, and later, by a famishing party of explorers and fifteen others, seen. Of the other, one of the large moas, only the fresh footsteps, 15 inches long, have been traced, as Mr. Layard states, by a party, and therefore the instance does not appear to be the same as that lately recorded in the Nelson 'Examiner' of July 12, 1861, where we read as follows:—

"About three weeks ago, while Mr. Brunner, chief surveyor of the Province, and Mr. Snaling, of the Survey Department, accompanied by a native, were engaged in surveying on the ranges between the Rewaki and Takara rivers, they observed one morning, on going to their work, the footprints of a large bird, whose tracks they followed for a short distance, but lost them at length among rocks and shrubs. The size of the footprints, which were well-defined wherever the ground was soft, was 14 inches in length, with a spread of 11 inches at the points of the three toes. The footprints were about 30 inches apart.

"On examining the bones of a foot of a moa in the museum, we find the toe to measure, without integuments, $8\frac{1}{2}$ inches, and those evidently form part of a skeleton of a very large bird; the length of the impression of the bird in question was 10 inches.

"The native who was in company with Messrs. Brunner and Snaling was utterly at a loss to conjecture what bird could have made such a footprint, as he had never seen anything of the kind before. On a subsequent morning, similar marks were again seen, and, as a proof that they had been made during the night, it was observed that some of them covered the footprints of those which the party made the preceding evening.

"The size of these footprints, and the great stride of the supposed bird, has led to the belief that a solitary moa (why one only?) may yet be in existence. The district is full of limestone caves, of the same character as those in which such a quantity of moa bones were found about two years ago in the neighbouring district Asrere. We believe that it is the intention of the Government to take steps to ascertain the character of this gigantic bird, whether moa or not, which keeps watch in these solitudes."

" SIR,

" I have been much interested in reading Mr. Buckland's letter on the subject of the 'Dinornis,' in which he asks for suggestions for a mode, if possible, of taking this extraordinary bird alive. Having been 'well up' in trapping, when a boy, nearly all kinds of the wild animals known in England, I feel sure, and I think my friend 'High Elms' will agree with me, that it would be next to useless to attempt to capture this bird in the absence of further knowledge as to its habits, haunts, food, &c. There is, however, one plan which might succeed if it be found to frequent any one spot or path, which is to inclose a large space with coarse cord netting, like a sheep net, on the principle of a decoy, into which the bird might be driven or enticed, which could either be closed by a person on the watch drawing a line, or by a simple mechanical contrivance very easily arranged. The idea of taking such an animal by means of hooks and a bait I am sure would never succeed, though a 'man-trap' might; but there would be the certainty almost of the bird breaking its leg on the attempt being made to take it from the trap, supposing the trap to be so far successful. Of course it is not proposed to place net-work in the 'open,' as it would be visible, but, if judiciously arranged, as 'High Elms' would do it, in a country partially covered with wood, the trap might be easily concealed.

" A pitfall, too, might succeed, by having a powerful spring to draw a strong wire covering over it on the bird falling into it. If Mr. Buckland would like it, I will construct a model for him, which I am confident would succeed, supposing, of course, that a path could be found frequented by his 'friend.'

" WADDING."

✓ VOL. II. PAGE 106.

FLEAS.

HAVING in the text given some particulars relative to fleas in a state of captivity and tameness, and having said so much upon the favourable aspect of the subject, I think it time to argue for a while "per contra," as fleas when "performing" on our own persons are certainly a nuisance and a bore: it may, therefore, be possible that those interested in *getting rid* of

them may like to know somewhat of their birth and parentage.

In 1836, a paper was read before the Ashmolean Society at Oxford, by the Rev. J. Hussey, upon the growth of this little insect. "The flea" (he stated) "lays from eight to twelve eggs, which fall down into crevices or among dust, where they are hatched in about five days. They produce small white maggots, like cheese mites, which increase in size for about fourteen days, when they spin a bag or case of silk around them, and become chrysalids. Within this case they gradually turn darker in colour, until at the end of about sixteen days they come out perfect fleas, having been on the whole about thirty-four days from the laying of the egg to a perfect state. M. Defrance's opinion concerning the food of the young maggot was quoted, namely, that it is fed by small grains of dried blood, which the parent has the power of extracting from the skin of the animals on which it feeds. It was shown that the growth of the flea may be retarded by temperature, and that they can survive the action of wet for upwards of twenty-four hours. A maggot in the earliest stage was found to live between two and three weeks in confinement without food, and the dust in which those observed had been kept gave birth to about twenty-five fleas in five months and a half, without any other food than what the dust might have contained. For the destruction of fleas, it was said that some thought water effectual for killing the maggots; but M. Defrance recommended rather the application of heat, although nothing was so much to be depended on as cleanliness. In the conversation which followed, it was observed that fleas were

known to have been killed by exposure to the sun in Egypt, and that they seem to be affected by the heat of noon in Italy. In confirmation of the temporary suspension of their growth, Dr. Buckland mentioned that he had opened boxes which had been packed at Naples three years before, and found in them great numbers of large fleas in full activity. He added that he doubted whether M. DeFrance's opinion concerning the food of the young fleas was correct. He (Dr. Buckland) believed that the maggots were fed by the scales and scurf which fell from the skin of animals, while the full-grown fleas lived on blood alone."

I believe the herb *feverfew*, which can be bought at Covent-garden, will keep fleas away; anyhow, moths will not come near it. It is a capital thing, I hear from A. Creighton, Esq., to hang up on or sew into the linings of carriages.

A correspondence took place not long since in "The Field," relative to the best way of getting rid of fleas. I beg to quote an abstract, for the personal benefit of my readers:—

"FLEAS.—A correspondent in 'The Field' asked for a remedy against the inroads of fleas. Here is one. Let him take a few handfuls of fresh garden mint, and strew them about his rooms, particularly under the beds, and I have no doubt they'll soon depart. This plan I adopted when on the Neilgherry Hills, in the Madras Presidency, with perfect success; for myself and black servants having been tormented with them, were all at once relieved from their unpleasant attentions.—*A Subscriber.*"

— " 'Circumnavigator' ought to have no difficulty in banishing fleas from the house he describes by the plentiful use of water and ordinary detergents, seconded by flea-powder. On the continent, the dealers in *poudre insecticide* undertake that sort of thing by contract; and I dare say Vicat or Mismaque, of Paris, on being applied to, would be willing

to send 'Circumnavigator' one of their *voyageurs en punaises* to take the job in hand.—*Peregrine Cosmos.*"

— "It was some years back our fate to take a house in which we succeeded an Irish family, who bequeathed us a most abundant legacy of the jumping gentwv. I remember we placed bunches of wormwood under the beds, and burnt it freely in the rooms, and from that or other causes the fleas soon disappeared.—*E. W.*"

"**FLEAS IN DOGS.**—As no one answered your correspondent who made some inquiry about those nasty pests of the kennel, I venture to give him a receipt which is both cheap and easily applied. Procure six or eight gallons of gas-water from some gasworks, which are sure to exist in every enlightened town; the water costs nothing, but the man who fills your cask deserves a shilling. Put the liquid into a large tub, and then introduce 'Sancho' and all his host of warm friends. After a few minutes, you will find not one is left to tell the tale, or tickle Sancho's tail either. You must keep good hold of the dog while he is in the tub, and be sure to keep the water out of his eyes and mouth. I do not think that it would injure him, further than causing the eyes to smart acutely. Ten gallons would wash a pack of hounds. You must place the dogs in a fresh kennel until their old one is thoroughly cleaned.—*Random.*"

— "The refuse of the tan is made into 'mottes,' or sold rough by the Parisian tanners for fuel. Thousands of cartloads are disposed of daily. Were I in Paris I would personally inquire about it, but should W. A. R. have any acquaintance in Paris who would apply to any one of the many tanners in the Faubourg St. Marceau, he will obtain all particulars.—*H. G. (of Paris.)*"

— "I have found the following receipt most effectual in killing fleas in dogs, viz., to rub them well over with whisky—it acts like magic, killing the fleas instantler; if all are not polished off in one application, another will be necessary. Never having seen this remedy mentioned in 'The Field,' and having seen frequent applications from correspondents on the subject, perhaps you may think it worth inserting; one great thing in its favour is, it is so simple and clean.—*H. S.*"

— "I have tried the 'Insecticide Vicat' on a small spaniel, and find this powder soon cleaned it of the fleas; it also soon kills flies, wasps, &c.—*A. Y.*"

— "H. H. W. writes in 'The Field' of July 21, 'my terrier pup is covered with fleas,' and he asks for a remedy. Rub in a mixture of soft soap and a small quantity of turpentine. Put him in a loose box all night, with plenty of straw. Next morning wash off with soap and soda. I have tried the above remedy (sometimes adding train oil) for years, and always with success; but I never put my dog in a hamper,

and without water. The dog so treated requires room and air, with plenty of straw to rub himself in. The application is stinging, and makes the dog more or less feverish and irritable for a time, consequently he requires air and water, to the want of which I attribute the dog's death. Bed on brackens or heather, and you will have no fleas.—*Burnside.*"

- "TO DESTROY FLEAS IN FLOORS.—In answer to your correspondent relative to 'a means of destroying fleas in floors,' I beg to say I have used the following most successfully:—I made a strong decoction of laurel-leaves by filling a large copper with the leaves, adding as much water as I could, and boiling them for four or five hours. I then took the leaves away, and deluged the floors with the boiling hot liquor. There were thousands of fleas in the floors at the time; but I lived for several years in the house, and I do not recollect to have seen one afterwards. The liquor will but very slightly discolour the ceilings, which of course can be whitened again. The quantity of liquor I used was as much as sixty or seventy gallons.—*Correspondent of the Builder.*"

*FLEAS, &c., IN MONKEYS.—Mr. Bartlett tells me he got an old, very dirty meerschaum pipe, and soaked it in spirits of wine. With this tobacco oil spirit he then well rubbed the skin of the monkeys, and the colony of the "Poux" family departed. He afterwards had a comb used freely. The monkeys were spider-monkeys and very valuable.

VOL. II. PAGE 107.

ANOTHER HAIRLESS (ELEPHANT) HORSE.

I BEG here to quote from "The Field" further evidence from the pen of that elegant writer and acute investigator, Mr. W. Pinkerton:—

"Mr. Buckland's description of an 'elephant-horse,' in a late number of this journal, brought to my recollection a 'Nile-horse,' of which I read an account, in the 'Philosophical Magazine' for 1801; and as the history of

this latter animal involves a curious physiological problem, while it discloses a gross act of showmanship, perhaps it may not be without some interest to the reader. About 1796, a French showman, named Alpy, who had previously been an attendant in the Royal Menagerie at Versailles, exhibited what he termed a Nile-horse over the greater part of Germany. This animal was almost destitute of hair; for the report, drawn up with great minuteness by the officials of the Veterinary College of Berlin, states, that it had only one hair on its whole body, viz., 'a black bristle, three-tenths of an inch in length, on the lower eyelid of the left eye.' Alpy, of course, told a romantic story about the animal; how it had been taken, after a terrific hand-to-hand combat, by an Austrian officer from a Turkish bey; how sultans and pachas had offered fabulous amounts in gold and jewels for its ransom; and that it was one of a race of hairless horses whose *habitat* was on the banks of the upper waters of the river Nile. As the horse seemed to be about fifteen years of age, Alpy was induced to sell it to the Veterinary College of Berlin for 50 louis-d'ors—a very smart sum for a horse at that time and place. The German, French and English scientific periodicals noticed the strange animal, all agreeing that it was of a decidedly distinct race from the common horse; the only point of discussion being with respect to its native country. Professor Nauman, in his 'Manual of the Science of the Horse,' gave not only a description, but also an engraving of the hairless brute, and gravely added his reasons for concluding that it was a native of the little-known tropical regions of Africa. For four years this animal

had been the lion, wonder, and pride of the Berlin College; when, one day, a country farrier, named Sebald, from Ulm, in Suabia, visiting the college, immediately recognised it as an old acquaintance. He knew it, he said, when a foal, when it had as good a coat of hair on it as any other horse—he could even tell what caused its hair to fall off; but, as may be supposed, he was most unmercifully pool-pooled by the savans of Berlin. They did more, they proclaimed the country farrier's utter ignorance of horseflesh, and even demeaned themselves by ridiculing the rude *patois* of the Suabian. Sebald's *amour propre* was hurt in the tenderest part; he well knew that he was right, and he determined to trace the history of the animal to its minutest point. He did so, and incontestably proved that the horse was no other than a common German hackney. I need not follow Sebald's history of the animal from a colt; suffice it to say, that it had belonged to a coach proprietor in Franconia, and then was in no respect different from any other horse of its kind, except that it was taken with the strangles. The coach proprietor then sold it to a neighbouring peasant, who, according to the custom of the country, gave the horse leaves of the savin-tree (*Juniperus sabina*), as a cure for the disease. The savin apparently cured the horse, but the peasant to prevent a relapse, gave it more or less of those leaves for a whole year. In the mean time the horse began to have a nice, sleek coat of hair, which, however, soon dropped off, leaving the animal almost naked. Another coat ensued, and this also soon dropped off. Nature however, made a last effort; the hair grew for a third time, but once more dropped off entirely, and neve-

attempted to grow again. The peasant continued to work the animal, but was so annoyed by the neighbours laughing at his naked horse, that he took it back to the coach proprietor, and begged that he would take it off his hands on any terms. The coach proprietor did so, and taking it to another part of the country, exhibited it as a Cyprus-horse. But dreading a very salutary German law, which places what we may term the high art of the noble science of showmanship in the same category as swindling, the coach proprietor sold the animal to an Italian exhibitor, who took it to France. The Italian, in turn, sold it to Alpy, who brought it back to Germany, where it became famous as the Nile-horse. Most of us know, and those who do not must take it for granted, that savin is a very disreputable plant, of a notoriously infamous character; but, whether it was guilty of stripping the hair off this horse, or the animal was simply afflicted with a natural alopecia—the Berlin veterinarians affording no information on the subject—is utterly unknown to—WILLIAM PINKERTON.”



VOL. II. PAGE 128.

GROWING PLATE.

WITH respect to the peculiar mineral parasitic grow on this curious plate, I have received the following note from my friend Warrington Smyth, Esq., of the Government School of Mines, Jermyn-street:—

“I wish, for the sake of a solution to your question about the growing plate, you had been able to obtain a

bit of that famous piece of crockery. But in the absence of opportunity for testing it, I have little doubt that its 'growth' must have been analogous to the fibrous shoots of ice which you may see on a frosty morning, bearing upon them bits of earth or little stones, which they have raised from the ground with the force developed in crystallization. In the old workings of mines, the vigorous extension of acicular crystals of sundry salts (such as sulphates of alumina, of magnesia, or of iron) appear under very similar aspects, and often look exceedingly like vegetation. The efflorescence of salts in alluvial plains—as in Hungary and Egypt—is of the same kind. Now, the body of the plate contains alumina, sometimes magnesia, and sundry hypotheses might be started for bringing to these bases the necessary sulphuric acid for forming the fibrous crystals of alum, or of Epsom salt, which I fancy was most likely the 'growing' part of the plate, which carried upon its crest the fragments of the broken glaze.

"Yours, very truly,

"WARRINGTON SMYTH."

VOL. II. PAGE 164.

ST. MARTIN'S VAULTS

It would take a whole chapter, were I to describe in detail the many curious, and I may say ghastly sights which came under my notice during the sixteen long days I spent in this dismal necropolis. I cannot, how-

ever, resist mentioning one or two curious things, viz. :—

1st. The discovery of many bodies that had been buried in woollen, according to an Act of Parliament passed “that all persons should be buried in woollen;” in order, I believe, to encourage the wool trade, which was at that time in a state of depression. The date of the passing of this Act I know not. I have, however, among my father’s old papers, a copy of

“A Register of all the affidavits of the parish of Combeypne (Devon), according to a late Act for burying in woollen, 1678.”

The first entry is as follows:—

“An affidavit for the interment of Anne Collings was brought unto me, Rich. Pinney, Minist., the eleventh day of March, 1678.”

The dates following are 1679, so that the Act must have been passed before 1678.

My friend the Rev. A. Taylor, Chaplain of Gray’s Inn, has just been kind enough to give me the following:—

“Burying in woollen, 18 Charles II., c. 4 (1666).

“Repealed and new statute framed, 30 Charles II., § 1, c. 3 (1677).

“Repealed, 54 Geo. III., c. 108 (July 23, 1814).”

2nd. This discovery of a coffin among those of a very old date, under the tower of the church in which a very curious, and, I believe, hitherto unobserved change had taken place: among other coffins, I observed one, the wood of which had crumbled into dust, exposing what I at first thought was a coffin, made entirely of beautiful white porcelain. On closer examination of this coffin, as the men moved it, we found that it was not solid, but

very easily broken. I suspected that it was the lead of the coffin, by some mysterious agency, converted into a new substance. A chemical friend, therefore, kindly examined it for me, and reported that it was pure carbonate of lead.

How this remarkable chemical change took place, I know not. I believe it is the only case on record. I have deposited a specimen in the Museum of the Royal College of Surgeons.

3rd. An anti-resurrectionist coffin; the peculiarity of which was, that the upper lid was fastened on to the lower lid by strong moveable V-shaped, steel springs, which rendered it morally impossible for resurrectionists, or any one else, to break the coffin open from without. Of course we had no idea why this precaution was necessary in this individual case. We found no other like it.

4th. A leaden coffin, which, from the sound, was evidently three-parts filled with fluid. This, too, was a mystery; it was almost as round as a cask.

5th. A very remarkable, and at the same time peculiar crystallization upon some of the bones. The crystallization was in delicate and exceedingly fragile glass-like spiculæ, and covered some of the specimens, especially inside the skulls, like the hoar-frost we often see on fine frosty winter mornings.

The reader may ask how we managed to see all this, as above described. In a great portion of the vaults, we found that the bodies had been buried without lead, anterior to the Act for burying in lead. In many instances the wood of the coffins had quite decayed, leaving the contents, in some instances, in the state of a mummy; in others, simply a heap of loose bones.

In the more remote parts of the vaults, where the coffins were of great age, we frequently found simply dust—the dust of death.

I refrain from giving further particulars: suffice it to say, that the facts brought under my notice convinced me of the terrible danger which must have arisen in former times (from the fact of the vaults being below the church) to those who attended Divine worship in the church, many of whom, doubtless, owed serious attacks of illness, if not worse, to the mephitic vapours inhaled.

The Act, therefore, which forbade any further interment in vaults under churches was one of the wisest ever passed for the benefit of the community at large.

During all the operations carried on under the vaults, the Churchwardens spared neither time, nor trouble, nor expense, in anticipation of any mischief that might arise to ourselves or the labourers. I must here compliment them upon the manner in which they carried out their task with the utmost possible decency and order.

VOL. II. PAGE 222.

MORE ABOUT CLAWS ON LIONS' TAILS.

I HAVE, since writing the previous note, received the following from my friend Mr. Charles Wolley:—

“I have found both the passages to which you refer. The first is Pliny, N. H. viii. 19: ‘Ejus (iracundiæ) in principio terra verberatur (caudâ); incremento terga, *ceu* quôdam incitamento, flagellantur:’ ‘as his rage increases, his back is fashed with it, as if it were an instrument to excite (his anger).’

"This is the strict sense of the passage; and 'incitamentum,' though capable of being translated 'spur,' if the context points to this sense, does not usually mean 'a spur,' which is 'stimulus,' or 'calcar.' It is hardly fair to ignore the 'cen' as you do.

"The passage in Homer is in Iliad Y (xx) 170. It is literally translated:—

"And with his tail he lashes his sides and loins on both sides, and *drives* himself *on* to fight.'

"ἐποτρύνει, 'drives on,' might well be translated 'spurs on,' but this would convey an incorrect idea of the expression, as far as Homer is concerned, as he never makes any allusion to riding on horseback, except in describing the performance of a mountebank.

"The metaphor is either from driving the war-chariots to battle, or from the practice of the officers in Oriental nations *flogging* their men on to the attack, as circumstantially described by Herodotus in his account of the battle of Thermopylæ. I think in both the passages the idea intended to be conveyed is, that the tail is used as a 'whip' rather than a 'spur.'

"The lines in Homer are thus translated by Long and Derby:—

"And with his tail he lashes both his flanks
And sides, as though to rouse his utmost rage.'

(Vol. II. page 263, line 197.)

"All Pliny says about lions is very interesting, though not trustworthy. You observe that he was aware of the fact of their taking to man-eating in their old age, when they could not catch antelopes.

"Believe me to be,

"Yours very truly,

"Frank Buckland."

"CHARLES WOLLEY.

INDEX TO VOL. II.

A signifies Appendix.

	PAGE		PAGE
ALDERSHOT skull	145	Child's head in Oxfordshire vil- lage	152
American diver, the	72	Children bathing in the sea	193A
Ancestral skulls	138	Clock, the mummy	50
Anthropoglossos, the	130	Claw on lion's tail	248A, 306A
Animal trade, head-quarters of	99	Clift, Mr., on human skeleton	151
BABIES, English and Yankee	85	Contents of Ripon crypt, calcu- lation as to	135
Baby-show, Barnum's	82	Cong Abbey	226A
Battle of Hythe, the	140	Cong Salmon Pass	227A
Bethlehem Hospital	159	Copper eagle	133
Bone-house at Ripon, the	133	Copper feathers	125
Bones in cattle, diseased, at Swansen	248A	Cong, large pike at	212A
— history of the Ripon	136	Cow, the three-legged	110
— possible age of the	137	Crypt, the Ripon	134
Bonnet, bank-notes in	150	— at Hythe	139
Bradley, the giant	34, 282A	College of Surgeon, catalogues presented by	178
Buckland, Dr., evidence on human skeleton	151	Crystals on human bones	305A
Bull, the performing	93	Coffin filled with fluid	305A
Beh Jon-on, skull of	180	DINAN, rope feat at	91
— coffin of	183	Dog, the Arctic	55
— grave of	187	Doncaster, skeleton discovered at	151
— inscription over	138	Donkey-bagger, the	72
Reg butter	224A	ELECTRIC shock man, the	72
CATCH-pennies	77	Embalment by Mexicans	46
Caravan, contents of the	57	Esquimaux in Westminster Abbey	59
Carl advertiser, the	74	Effect of shot on fish	201A
Carrot-seeds mistaken for ani- mals	78	Enormous jack	209A
Chang, the tall man of Fy- chow	272A		

	PAGE		PAGE
Exhibition of vermin-traps	237A	Giant of Scripture, Mr. C. Harle	
Execution of Chunic, the cle-		on giants	42
phant, at Exeter Change	254A	Gibbet Lane	150
Egg of the moa	291A	Glamorganshire cave, skeleton	
		in	154
Fat boy, the Australian	56	Glass pens, &c., sellers	80
Fire-eater, the	73	Golden Farmer, the	150
Fish, the talking	111	Goliath of Gath, height of . . .	281A
Fish, sleep of	197A	Growing plate, the	128, 302A
Fleas, penny exhibition of	80	Groom, the Dutch	109
— performing	100		
— the market	101	HAIR, extraordinary growth of	
— Russian	102	human	53
— performing, how to train	103	Highwaymen on Aldershot	
— — how fed	105	Heath	149
— the patriarch	106	Horse, the elephant	107, 299A
— development of	295A	— the three-legged	108
— in monkeys and in floors,		How the eagle was made	124
to destroy	299A	Human skeleton on glacier . . .	39
French giant, the, M. Brice . . .	23	— species, some varieties of . .	52
		Hunterian medal	177
GIANTS, Mr. Simpson on	283A	Imiors, bones of, in chains . . .	157
— nistory of	27	Indian rope feat	89
— measurement of	28	India-rubber gum trap	245A
— and Life-guard horses	28	Infant Hercules, the	74
— (Brice's) shoes	29		
— and cabmen	30	JACK, large, at Kineton Park	211A
— in general	32, 283A	Jamrach's animal store	96
— the Spanish	32	Jenny's performances	112
— Patrick Connor, and Giant		Jewels, how to secrete	150
Murphy	34	John Hunter's remains dis-	
— records of	35	covered	159
— the Russian, Loushkin		— — search for	162
	36, 280A	— — register of death	163
— the Vienna	36	— — inscription on coffin	168
— the Turkish	37	— — reinterment of	170
— female	43	— — grave of, in West-	
— bones discovered in bog	38	minster Abbey	174
— — dug out of the earth	40	— — statue of	175
— giant's tooth	41	Joyce's country	280
— Bradley, the	282A	Julia Pastrana	44

	PAGE		PAGE
LADDER feat, Olmar's	88	Nondescript, female	44
— feat on, in mid air	87	— and mermaid manufactory	120
Leyden, skull of	41	— the, appearance	119
Lead of coffin, chemical trans-		— the	118
formation of	304A		
MARBLE lady, the	127	O'BRIEN, skeleton of	32
— — — — —	258A	Olmar walks with his head	
Mental photographs, the Cong		downwards	86
Pass	227A	— physique of	88
Mermaid, a Yankoe	113	Optical penny show	80
Mermaids	114	Origin of mermaid, superstition	
the latest thing in	115	about	121
— out of luck	116	Over and under route for	
— Barnum's	117	salmon smolts	234
Microscopes, penny	78		
Moa, evidence as to recent		PARAKEETS, six thousand . .	97
existence	285A	Peter Creed, mummy of . . .	47
— trap for	295A	Plate growing, cause of . . .	302A
— egg of	291A	Plica polonica	54
— the New Zealand	295A	Petition crown	252A
Monkey, performing	73	Peto, the four-footed giant .	273
Mummies and showman . . .	49	Porpoises, journey with . . .	1
Mummy, decease of	51	Porpoise, the sick	2
— guano	47	— treatment of, with brandy .	
Musical glass performer . . .	76	and water	2
		— breath of	3
NEEDLE, dreadful trick with .	75	— fishermen's cruelty to . .	4
New Zealand song	62	— eyes put out	4
— — — chiefs at lunch . . .	63	— out of water	5
— — — moko, or tattoo marks	64	— Mr. Dutton's	6
— — — chiefs, row with . . .	67	— from Boston	7
New Zealanders	59	— and sturgeon	7
— — — wrestlers	62	— diversity of	8
— — — mummy heads of . . .	65	— respiration of	8
— — — catastrophe with . . .	66	— elegy on	9
— — — horror of snakes . . .	67	— the sucking	14
— — — and snakes	68	— the Folkestone	15
— — — and Kiwi Kiwi	69	— alive, how to carry . . .	16
— — — and zebra	69	— in railway van	17
— — — testimony of moa . . .	70	— how to feed	19

	PAGE		PAGE
Porpoise wanted for the Zoolo- gical Gardens	21	Slaughter of Chunnie, original account of	256
— in verse, Buckland's	22	Sling stones	143
— fishing for	269A	Smuggling mummies	48
— anatomy of	261A	Sovereigns, how to conceal	150
Primæval forest at night	243A	Space influences size of ani- mals	212
Prize vermin traps	243A	Stable-yard, contents of	98
Razor-paste seller	81	Stone-cracker	76
Relics of old London	156	Sturgeon remonstrate	11
Red skeleton, foreigners remarks on	156	TALLEST men in England	31
— — Mr. Duncan's verses on	156	Teeth, human, worn down	142
Rhine salmon-fishery	216A	Thames water in microscope show	79
Roman skeleton, inquest on	154	Trap for New Zealand moa	293
Russian skulls	148	VAULT, No. Three	165
Resurrectionist, anti, coffin	305A	Vermin, traps for	243A
ST. MARTIN-in-the-Fields, vaults of	164	WARIOR chiefs, Maori	59
Salamander, the living	73	War-dance, the double	61
Salmon-fly and shrimp	214A	Wandering mountebank	71
Salmon, to tell weight of, by measurement	211A	We test Anthropoglossos	131
Seal, musical	260	Whale, the Blackpool	13
Shark's teeth as earrings	64	Whale fins exhibited as giant's lund	40
Sick porpoises, notice to	6	Whale, tame, at Boston	259
Skeleton, the living	91	Wild animals killed in India	249A
— discovered at Doncaster	151	Woman, woolly, of Hayti	52
Skulls, British	141	Woman's bones dyed red	155
— Danish	141	Woollen, act for burying in	304A
— at Aldershot	145		

LONDON:
PRINTED BY WILLIAM CLOWES AND SONS, STAMFORD STREET
AND CHARING CROSS.

